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**TRANSACTIONS,**

&c. &c.

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天長寺藏書

TRANSACTIONS  
OF THE  
ASSOCIATION  
OF  
Fellows and Licentiates  
OF THE  
KING'S AND QUEEN'S COLLEGE  
OF  
*PHYSICIANS*  
IN  
IRELAND.

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VOLUME III.

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1820.



THE PATENT

OFFICE

IN

THE UNITED STATES OF AMERICA

FOR

A NEW AND IMPROVED METHOD OF

DOING BUSINESS

BY MEANS OF

TELEPHONES

AND

TELEGRAPHS

AND

THEIR

USE IN THE TELEPHONE AND TELEGRAPH SYSTEMS OF THE UNITED STATES OF AMERICA

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THE  
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OF THE

*King's and Queen's College of Physicians in  
Ireland.*

INSTITUTED THE 19TH JUNE, 1816,

For the purpose of more intimately uniting the Members of the College,  
and for the advancement of Medical Information.

---

*All Communications are to be directed to the Secretary, Doctor  
Robert Reid, 16, Belvedere Place, post paid; and Do-  
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A

PATHOLOGY AND TREATMENT

OF

FEVER,

FOUNDED PRINCIPALLY UPON

OBSERVATIONS MADE DURING THE EPIDEMIC OF THE  
YEARS 1817, 1818, AND 1819,

BY ROBERT REID, M. D.

---

*First Portion read 5th October, 1818.*

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PREVIOUSLY to the late severe epidemic many years have elapsed since contagious fever carried its ravages through this kingdom with a formidable aspect. This circumstance has therefore justly excited the anxiety and exertions of medical practitioners mutually to contribute to the general stock of information, by which means may be devised for arresting the progress of any future epidemic. The variety of opinions which at present prevail among writers respecting the nature of fever, should induce those who have extensive opportunities for observation, to communicate their opinions to the public, and to state the circumstances which influenced them.



Having been connected with the medical department of the House of Industry during the prevalence of the late contagious fever, I propose, in the following pages, to give some account of the circumstances of the disease as they occurred under my own inspection.

Some estimate of the extensive field for observation that was afforded to the medical practitioners of this Institution, may be formed from the following

GENERAL REPORT OF THE HOUSE OF INDUSTRY  
ASYLUMS, HOSPITALS, AND PENITENTIARIES,

*From the 6th January 1818; to the 5th January 1819.*

REPORT OF THE HOUSE OF INDUSTRY, &c. FROM 6TH  
JAN. 1818, TO 5TH JAN. 1819.

|                               |   |   |              |
|-------------------------------|---|---|--------------|
| Admitted in that Period, Men, | - | - | 5537         |
| Women,                        | - | - | 6873         |
| Boys,                         | - | - | 2067         |
| Girls,                        | - | - | 2117         |
|                               |   |   | <hr/> 16,594 |

*Admitted from the following Places :*

|                              |   |   | Men        | Women      | Children   | Total       |
|------------------------------|---|---|------------|------------|------------|-------------|
| From Connaught,              | - | - | 246        | 202        | 118        | 566         |
| Leinster,                    | - | - | 4463       | 5911       | 3721       | 14095       |
| Munster,                     | - | - | 181        | 224        | 98         | 503         |
| Ulster,                      | - | - | 444        | 367        | 141        | 952         |
| Great Britain and elsewhere, | - | - | 203        | 169        | 106        | 472         |
| Total,                       |   |   | <hr/> 5537 | <hr/> 6873 | <hr/> 4184 | <hr/> 16594 |

|   | Men | Women | Children | Total |
|---|-----|-------|----------|-------|
| Transmitted during the Year to }<br>England,      | 57  | 42    | 54       | 153   |
| Transmitted to the Country Parts }<br>of Ireland, | 653 | 362   | 70       | 1085  |
| Total,  | 710 | 404   | 124      | 1238  |

The Passage to Liverpool was paid for such Paupers as went to England, and the sum of 64*l.* 15*s.* 6*d.* was given in small sums for Travelling Expenses, to those Persons who went to the Country Parts of Ireland, with a certain allowance of Provisions to each.

---

STATE OF THE HOUSE OF INDUSTRY ASYLUMS AND  
HOSPITALS, THE 5TH JAN, 1819.

*House Department.*

|              |  |   |   |   |   |      |
|--------------|--|---|---|---|---|------|
| Class, No. 1 | Epileptic,                             | - | - | - | - | 41   |
| 2            | Paralytic,                             | - | - | - | - | 32   |
| 3            | Blind,                                 | - | - | - | - | 20   |
| 4            | Deaf and Dumb,                         | - | - | - | - | 13   |
| 5            | Incurable Surgical Patients,           | - | - | - | - | 33   |
| 6            | Lunatics and Idiots,                   | - | - | - | - | 167  |
| 7            | Infirm, Aged, and incapable of Labour, | - | - | - | - | 648  |
| 8            | Destitute, deserving, and labouring    | - | - | - | - |      |
|              | under Temporary Distress,              | - | - | - | - | 72   |
|              | Total,                                 | - | - | - | - | 1026 |

*Asylums for Industrious Children.*

|                              |   |   |     |
|------------------------------|---|---|-----|
| Children in the Male Asylum, | - | - | 322 |
| in the Female ditto,         | - | - | 402 |
| in the Dry Nursery,          | - | - | 34  |
| Total,                       | - | - | 758 |

*Infirmary Department.*

|   |   |   |      |
|---|---|---|------|
| Patients in the Fever Hospitals,        | - | - | 699  |
| Children of do. in Wards attached,      | - | - | 50   |
| Patients in Richmond Surgical Hospital, | - | - | 149  |
| in Lunatic Cells,                       | - | - | 83   |
| in Chronic Wards,                       | - | - | 38   |
| Total,                                  | - | - | 1019 |

|   |   |   |      |
|---|---|---|------|
| Extern Scavengers and Whitewashers, (dieted,<br>employed at cleansing and whitewashing the<br>Habitations of the Poor in Dublin afflicted<br>with Contagious Disease, | - | - | 145  |
| Nurses and Servants employed in the Menial Of-<br>fices of the House, Asylum, and Hospitals,  | - | - | 335  |
| Total of House of Industry Asylum, and Hospitals,   | - | - | 3283 |

*State of Employment in House and Asylums.*

|   | Adults | Children | Total |
|---|--------|----------|-------|
| At Plain Work,  | 67     | 150      | 217   |
| Weaving,  | 28     | 24       | 52    |
| Winding Yarn, &c.   | 20     | 30       | 50    |
| Spinning, Carding, &c.  | 40     | 0        | 40    |
| Lint, Lace, Glove-making, Knitting, &c.   | 18     | 20       | 38    |
| Shoemaking,   | 10     | 9        | 19    |
| Tailoring,  | 2      | 21       | 23    |
| Hosiery,  | 0      | 14       | 14    |
| Quilting,   | 0      | 10       | 10    |
| School,   | 0      | 444      | 444   |
| In Dry Nursery,   | 0      | 34       | 34    |
| At Gardening,   | 44     | 3        | 47    |
| Cleansing and whitewashing the Habi-<br>tations of the Poor in Dublin afflicted<br>with Contagious Disease, | 145    | 0        | 145   |



|   | Adults      | Children   | Total       |
|---|-------------|------------|-------------|
| Brought over, - - - - -   | 374         | 759        | 1133        |
| Nurses and Servants employed in the<br>Menial Offices of the House and Asy-<br>lum, - - - - - | 153         | 0          | 153         |
| Infirm, Aged, and incapable of Labour, 807  | 807         | 0          | 807         |
| Total,  | <u>1334</u> | <u>759</u> | <u>2093</u> |

*Note*,—The Adult Poor, capable of Employment, receive one-fourth of the Profits of their Labour.

Apprenticed during the Year, 61 Boys and 6 Girls.

|   |    |    |
|---|----|----|
| Gross Produce of the Labour of Adult Poor, £1045  | 7  | 0  |
| Gross Produce of the Labour of the Children, 1413 | 9  | 2½ |
| Total Produce of the Labour for 12 Months, £2458  | 16 | 2½ |

It being intended to limit the number in the Asylum to 600 orphan and destitute Children, being the number which the building is calculated to accommodate; it is therefore requested, no Child may be sent to the Asylum, except a vacancy be previously ascertained, as they must otherwise inevitably be refused admission.

#### REPORT OF THE HARDWICKE AND WHITWORTH HOSPITALS, AND THE RICHMOND PENITENTIARY.

|  |                                      |
|--|--------------------------------------|
| In the Hospital 5th Jan. 1818, - - - 560 | Discharged cured, - 14346            |
| Admitted since, - - 15797                | Died, - - - 976                      |
| <u>16357</u>                             | In Hospital, 5th Jan. 1819, - - 1035 |
|  | <u>16357</u>                         |

N. B. Of the above number, 14,963 were admitted into the Fever Hospitals within the last Year, and 757 died.



*State of the Hospitals, 5th Jan. 1819.*

|                      |   |   |             |
|----------------------|---|---|-------------|
| Fever Patients,      | - | - | 699         |
| Children of ditto,   | - | - | 50          |
| Chronic,             | - | - | 38          |
| Lunatic,             | - | - | 83          |
| Nurses and Servants, | - | - | 165         |
|                      |   |   | <u>1035</u> |

Three Carriages are provided to carry Patients afflicted with contagious Fever, which the Public are requested to apply for.

In addition to the Hospital accommodation, which the Institution has hitherto afforded for fever Patients, the entire of the Whitworth Chronic Hospital, and the Richmond General Penitentiary, have been appropriated by command of His Excellency the Lord Lieutenant, to the reception of Persons labouring under contagious disease, during the present prevalence of Fever. And moderate clothing is given on the recovery of such of the fever Patients as are unable to procure it for themselves, and a Viaticum to those who return to the country.

---

REPORT OF THE RICHMOND SURGICAL HOSPITAL,

Opened the 4th of June, 1811.

|                          |                          |            |
|--------------------------|--------------------------|------------|
| In the Hospital 5th Jan. | Discharged cured,        | - 782      |
| 1818, - 185              | Died, -                  | 59         |
| Admitted since, - 805    | In the Hospital 5th Jan. |            |
|                          | 1819, -                  | 149        |
|                          | <u>990</u>               | <u>990</u> |

*State of the Hospital, 5th Jan. 1819,*

|                                     |   |            |
|-------------------------------------|---|------------|
| Patients labouring under Accidents, | - | 31         |
| Chronic Surgical,                   | - | 49         |
| Venereal,                           | - | 24         |
| Scald Head,                         | - | 28         |
| Nurses and Servants,                | - | 17         |
|                                     |   | <u>149</u> |

A Dispensary is established in the Richmond Surgical Hospital for the Relief of extern Poor, who receive Advice, Medicine, and Flannel, if necessary. In the last Year 5164 extern Poor have received assistance.

The HOUSE OF INDUSTRY HOSPITALS, &c. &c. are open for the reception of the Poor of all Ages and Descriptions, *as far as the accommodation admits*, except Lunatics and Idiots, who are received from the Richmond Lunatic Asylum only, as incurable.

---

#### REPORT OF THE PENITENTIARY FOR ADULT FEMALE CONVICTS.

THIS Institution was placed under the direction of the Governors of the House of Industry, on the 1st of December, 1809. Its object is the reception, employment, and reformation of Female Convicts sentenced to Transportation. They are provided with Bedsteads, Beds, Sheets, and Blankets, and receive two meals daily of nutritive food. Those who are capable of industry are usefully employed in making Barrack Bedding, Shirts for the Army, and in weaving Calico, Jeans, Cord, &c. and receive one-half of the Profits of their Labour.

|  |   |   |     |
|--|---|---|-----|
| Admitted since 1st December, 1809,                 | - | - | 481 |
| Reformed and pardoned by his Excellency the Lord   |   |   |     |
| Lieutenant,  | - | - | 119 |
| Removed to the Hospitals in the House of Industry, |   |   | 24  |
| Remanded to Newgate as incorrigible,               | - | - | 25  |
| Removed to the Penitentiary in James's-street,     | - |   | 21  |
| Died,  | - | - | 10  |
| Discharged, the Period of their sentence having    |   |   |     |
| expired,   | - | - | 202 |
| Remaining in the House on the 5th January 1819,    |   |   | 80  |

— 481

*The present State is as follows:*

|                     |          |
|---------------------|----------|
| Number of Convicts, | - 80     |
| Children,           | - 7      |
|                     | <hr/> 87 |
| Employed at Weaving | - 10     |
| at Winding,         | - 2      |
| at Spinning,        | - 20     |
| at Carding,         | - 3      |
| at Knitting,        | - 28     |
| as Nurses,          | - 2      |
| Sick,               | - 6      |
| Children,           | - 7      |
| Unemployed,         | - 9      |
|                     | <hr/> 87 |

Gross Amount of Labour of Female Convicts,  
for Twelve Months, ending the 31st De-  
cember, 1818, - - - - - £150 15 11

#### GENERAL REPORT OF THE PENITENTIARY FOR YOUNG CRIMINALS.

THIS Institution was established by His Excellency the Lord Lieutenant, in 1801, and placed under the direction of the Governors of the House of Industry. Its object is the reformation of young Criminals sentenced to Transportation, and those who may be committed by Magistrates for petty Crimes.

|   |       |      |
|---|-------|------|
| Since its formation were admitted,          | -     | 1396 |
| Young Convicts sentenced to Transportation, | 226   |      |
| Young Criminals committed by Magistrates,   | 1170  |      |
|   | <hr/> | 1396 |



|  |   |   |        |
|--|---|---|--------|
| Of those have been apprenticed to Trades,          | - | - | 110    |
| Pardoned by the Lord Lieutenant,                   | - | - | 22     |
| Enlisted in the Army and Navy, by his Excellency's |   |   |        |
| Permission,  | - | - | 150    |
| Discharged by order of Magistrates,                | - | - | 768    |
| Transferred to the House of Industry for good con- |   |   |        |
| duct,  | - | - | 187    |
| Died,  | - | - | 12     |
| Escaped,   | - | - | 23     |
| Remaining in the Penitentiary,                     | - | - | 124    |
|  |   |   | ——1396 |

*State of Employment.*

|             |   |   |       |
|-------------|---|---|-------|
| At Weaving, | - | - | 28    |
| Winding,    | - | - | 20    |
| School,     | - | - | 76    |
|             |   |   | ——124 |

*Gross Produce of the Labour of Boys.*

One Year ending the 31st of December, 1818, ... £252 0 0

BY ORDER OF THE BOARD,

CROFTON FITZGERALD, Sec.

---

AMONG the 14,963 patients who were admitted into the fever wards during the year ending 1819, every variety, from the mildest febricula to cases attended with all the malignant symptoms which writers attribute to the plague, came under the review of the medical attendants. During this



period, the nurses and resident officers of the fever wards were repeatedly affected with the disease, plainly demonstrating its contagious nature. It may be worthy of remark, that the gentlemen employed for bleeding the patients seemed most liable to the attack. Few escaped having the fever three or four times during their attendance at the Richmond Penitentiary.

The great facility of *post mortem* examination at the hospitals of the House of Industry, enables the physician to obtain all the advantages which pathological anatomy can afford towards establishing a judicious treatment of disease. The prejudice of the people against allowing the bodies of the diseased to be examined, is gradually declining in this country. Instances have occurred of families, knowing that I examined some near relative, sending any other of their relations who were attacked with fever, into my wards; and these sometimes preferred lying on the floor until a bed became vacant, rather than be accommodated in any other part of the hospital.

The valuable papers on the epidemic at present under consideration, which have been given in the prior volumes of these Transactions, render it superfluous for me to enter minutely into the probable origin or mode of its introduction into Dublin. I can, therefore, only add my testimony,

that the first pressure of the disease was felt in the north-west district of the city.

Towards the end of 1817, the sudden and rapid increase of fever in Dublin began to attract the notice and excite the alarm of the inhabitants. At this period, several cases of eruptive disease occurred in the wards I attended; many of these so exactly resembled small-pox, that any practitioner would be induced to pronounce them that disease, who saw the patients only at the period of maturation: the course of the complaint, however, was remarkably different. It commenced with general febrile symptoms; at an uncertain day, generally between the third and seventh, an appearance of small vesicles thinly scattered over the face, containing a semi-transparent fluid, rather suddenly took place; these soon extended to the breast and other parts of the body. On first being discovered, they were about the size of half a small pea, without any redness or discoloration of the skin about the base. When the disease inclined toward a favourable termination, these vesicles did not increase in size after the first day of their appearance. In a few days the colour of the vesicle changed to a deep yellow: this was soon followed by depression at the apex, sometimes accompanied with a red margin round the base. At this period it would be almost impossible to distinguish the eruption from that of small-



pox. As the eruption advanced, the general febrile symptoms gradually declined, and as the pustules formed dark coloured crusts, they ceased altogether. When the disease took this course the patients had little occasion for internal medicine.

In some few instances the eruption took on the appearance of Pemphigus Gangrenosus, as described by Dr. Dixon. The vesicles, instead of becoming distended with yellow matter, rapidly extended their bases. The cuticle gradually subsided until it became rather depressed in the centre, discharging a thin corroding ichor from beneath until it separated, when the parts exhibited livid, mortified spots; these soon became general over the surface of the body, and excited an intolerable itching, probably from the ichor corroding the intermediate skin. This torment induced the patient to scratch himself severely until the blood flowed: he soon appeared one mass of mortification, and expired. This stage of the eruption was always accompanied with petechiæ, and appeared peculiar to children.

Many cases of severe vesicular eruptions occurred in persons who had passed through fever. This happened in some patients several weeks after they had been dismissed from the Fever Hospital.

These eruptions often proved extremely obstinate in resisting any mode of treatment that could be adopted. I have frequently observed such occurrences in former years when fever took on any degree of epidemic character.

About the period when fever appeared most prevalent, many instances of swellings in the neighbourhood of glands came under my observation. The first case of this kind that particularly attracted my notice, occurred in a gentleman, who, for a few days, supposed he had got a severe cold; his countenance appeared collapsed, and his attention was soon engaged by a small tumour, about the size of an almond, which he observed in his left groin, causing considerable pain on being pressed. It appeared in the hollow where the large vessels pass out of the abdomen. In a short time it attained the size of a walnut, and felt, upon examination, as if composed of several lobes. At this time there was not any discoloration of the skin. Upon feeling the tumour for the purpose of ascertaining its nature, the patient fainted; when recovered, he complained of severe headache, and all the symptoms of general fever. The next day some heat and redness were perceptible in the integuments over the tumour, and having already directed general remedies, cold lotions were applied to the swelling. A circumstance now oc-



curred worthy of particular attention :—It was observed that as the heat, pain, and size of the tumour appeared to be lessened by the cold applications, the general febrile symptoms were exceedingly increased. This was particularly conspicuous in a severe pain commencing in the back of the head, and extending round the forehead, soon followed by symptoms of delirium. The nature of the tumour being by this means developed, an immediate change in the mode of treatment was required. I directed a few leeches to be applied over the swelling, which soon effected some alleviation of the general symptoms. The next day a blister was placed upon the tumour, which discharged a thick viscid matter. This was repeated several times, with evident relief to the febrile symptoms, until the patient became convalescent; the tumour at the same time gradually diminishing, soon disappeared.

This case was remarkable on account of the early appearance of the swelling, which preceded almost every other symptom of fever. In general those depositions of matter did not take place until the fever was terminated, and in many instances the tumours were first observed on patients when quitting the hospital. Such tumours, however, soon subsided, requiring little medical assistance. In two cases, which terminated fatally, the swellings did not appear until about the twen-

tieth day, and the patients expired, one on the third, the other on the fourth day afterwards.

I had an opportunity of examining but one of these tumours after death ; it appeared seated in the right parotid gland ; when cut into the cellular substance, was found distended with a yellow sanious matter, some of which was extremely foetid. The gland itself did not appear to be much engaged, but many parts of its external substance seemed capable of secreting the morbid fluid. This appearance very well accords with the observations of Baron Larrey, who says, “ That the bubos in the plague never attack the tissue of the lymphatic glands, but shew themselves always beneath them, or in their neighbourhood. Sometimes the pus in dissolving the cellular tissue in the inguinal region will isolate the glands, and completely denude them, without altering their structure.” This celebrated writer is of opinion, that they are seated in the tissue of the openings of communication from the principal cavities of the body with the extremities, in the places where the cellular tissue contracts aponeurotic adhesions. Such a circumstance may probably account for the tumour feeling in the early stage as if composed of a number of distinct lobes, as occurred in the first case I have mentioned.

Many instances occurred where the general febrile symptoms appeared extremely mild, and



and quickly yielded to medical treatment, yet the period of convalescence was remarkably tedious. In those cases it frequently happened that several weeks elapsed before the patients' strength was sufficiently renovated so as to enable them to walk across the room. A few patients became affected with general paralysis shortly after they were dismissed from the hospital. Five cases of dysenteric affection after fever were admitted into the convalescent ward, which was under my care, but as none of them had a fatal termination I cannot speak of the morbid appearances which the disease exhibited after death in this epidemic.

With respect to the general mortality of the epidemic under consideration, within the limits of the city, I regret to observe, that a very inadequate idea can be formed by considering only the deaths which occurred in the hospitals. Having been appointed by government to inspect the north-west district of the city during the period when the fever was most extensive in its ravages, I observed that the families affected with it, seldom made application to the hospital for assistance until several individuals had fallen sacrifice to the disease. I have made every exertion in my power to ascertain the number of deaths which occurred without coming under the cognizance of the public hospitals, but without any satisfactory result. Were I to form an opinion



from the circumstances which came under my own observation, I would suppose at least six deaths in the city without medical interference, for every one that occurred in the hospitals.

Having briefly noticed some of the most remarkable varieties which occurred in the late epidemic, the general nature of fever may be investigated with little interruption.

The question, "What is fever?" has often been considered from the earliest period to the present time, and, as far as I am aware, without any decided or satisfactory answer. Many cases have been given in the periodical journals for the last two years, where the spinal canal was examined after death by fever, and various morbid phenomena of this part were observed. Such appearances have occurred to some so frequently that they have been induced to think "all fevers are spinal diseases ;"\* authorities, however, no less respectable, attribute fever to inflammation of the brain, and in many instances the morbid appearances after death can be detected only in the abdominal viscera. Fever has also been attributed to an altered or excessive determination of blood to particular parts, without attempting however to account for the cause of such change in the circulation of the fluids.

\* Edinburgh Medical Journal.

Such a variety of opinions respecting the probable seat of fever, may be considered as strong evidence, that none of the facts taken individually can be sufficient to explain the nature of the disease. If fever were to be considered an affection peculiar to any organ or apparatus, it should communicate similar disease to the different individuals attacked with it: but where several persons of the same family have been affected by the same contagion, or other cause of fever, such different symptoms occur in each individual, that a physician would be inclined to give them distinct appellations according to the nosology he was accustomed to adopt.

The situation in which patients dwell previous to or during fever, modifies considerably the symptoms. Doctor Jackson, in an account of the West-India fever, remarks, that "the cause of endemic fever has the same basis in all parts of the earth. On the plains near the sea-coast, muddy rivers, and foul grounds, the type of the fever is usually remittent, sometimes intermittent. It is generally mild, tractable, and regular in its form in the open, extensive, and sandy alluvial plains. In small plains, of a foul, swampy surface, it is irregular, and often violent. It is frequently malignant on eminences in the centre of plains, or on the margins of the banks which form them."



Such influence of situation over the type of disease affords sufficient reason to consider fever as the result of a general cause, which may be directed by accidental circumstances against some particular apparatus or function of the human frame. By considering fever to be strictly "*sin\_e morbo locali primario*," the endless disputes which have hitherto prevailed relative to the seat of fever, may, in some measure, be reconciled. An accurate investigation of the circumstances of the patient previous to the developement of fever and all the subsequent phenomena of the disease, tend to show some cause acting directly on the nerves, destroying their influence throughout the animal frame. The extreme vessels in the various organs are thus rendered incapable of resisting the force of the heart and arteries. This gives rise to congestion very different from active inflammation, the place of which is determined by the accidental debility of the part, or previous constitution of the patient.

The causes of fever seem to have an influence over the constitution of an individual most generally at the time when he is least capable of opposing the causes of debility. Thus men pass with impunity amid contagion when their functions are active and full of energy, while those are almost certainly affected with fever who come under its influence debilitated and exhausted with



fatigue. During the prevalence of an epidemic it is therefore not uncommon to observe men actively employed at the very sources of contagious fomites, escape uninjured, while individuals, even of their own families, sleeping in the neighbourhood, quickly sink under the influence of the pestilential atmosphere.

I, therefore, take the position, that fever arises from a cause acting directly against the functions of the nervous apparatus, destroying or impeding its influence, by which the balance throughout the entire frame is destroyed. Under such circumstances it must frequently occur that some organic structure shall be in excessive action, while all other functions of the frame mark extreme debility, or the reverse.

The natural distribution of the nervous apparatus into three systems, balancing each other, and, by their reciprocal influence, regulating the various functions throughout the animal frame with that precision which constitutes health, opens an interesting field to the physician who studies the phenomena of fever.

There can be no disease to which a nervous system is liable, without producing a corresponding derangement in the functions of the others. It may therefore seem difficult to attach

the symptoms of disease to their proper class. This circumstance must appear still more perplexing when it is recollected, that not a single point, however minute, exists in the animal frame during the healthy state, that is not under the reciprocal influence of the nervous systems, taken individually. The only mode by which it is possible at present to discriminate the symptoms, or rather that modification of symptoms, which indicate the nervous apparatus that is principally engaged in disease, is, by long and patient observation, in actual practice. The deductions thus obtained will be often confirmed by the morbid appearances discovered upon examination after death. It frequently, however, requires considerable experience to determine whether the morbid appearances after death be the consequence or cause of the previous disease. In many cases diseased states of parts which must have existed during life, are not to be discovered after death. I have known the symptoms of peritoneal inflammation continue for several days, at length indications of effusion into the thorax became manifest, and the patient died. Upon examination the contents of the abdomen appeared nearly natural, but all the consequences of the disease were found in the thorax. In young persons, generally under the age of fourteen years, all the symptoms of disease in the brain have been predominant even until a few hours before death, but upon



examination the brain has been found in appearance perfectly sound, while marks of the most extensive disease were detected in the thorax.

From the manner in which symptoms have been hitherto recorded, it is almost impossible to derive the information necessary to point out the functions which are principally deranged. The importance, therefore, of establishing some general principles, by means of which a clue may be obtained for unravelling the intricacies of disease, must be evident to the most superficial observation.\* An accurate acquaintance with the functions of the different nervous centers, will probably be found to facilitate considerably the establishment of such principles. I have already laid before the public a general view of the functions peculiar to each system,† and their natural

\* There is, probably, no disease in which the importance of general principles is more apparent than in that known under the term Hydrocephalus.—How frequently has this complaint been attributed to *worms, disease of the liver, &c. &c.* at the period when remedial efforts would be attended with the best success. Were the practitioner to consider the regular concomitant symptoms which point like rays to a determinate centre, this disease would not so frequently be attributed in the early stages to the *liver, lungs, &c. &c.*; but the physician would quickly detect whether it was the cerebral, spinal, or ganglionic system, which being deficient in *structure* or *function*, gave origin to the disease.

† *Vide*, “Treatise on Tetanus and Hydrophobia, with Observations on a natural Classification of Diseases in general.”



boundaries may be even anatomically demonstrated. This arrangement, therefore, I propose to adopt in the investigation of the Symptoms and Pathology of Fever.

There can be no doubt that fever, when left to its own course, passes through certain periods or stages, which are attended with peculiar symptoms. In the infancy of knowledge, when physicians had only the means of contemplating the phenomena of disease, without being aware of their causes or pathology, it is not surprising they adopted the idea of critical days. It was chiefly by means of these that they were enabled to foretell the events of disease, and thus give the appearance of sagacity to their doctrine. The great deficiency of collateral information, which is absolutely necessary to the physician, may be a cause of the slow progress of medical science in the former ages. From this arose the disposition of practitioners to follow, as if blindfold, the tenets of some former physician, the celebrity of whose name was long established. The facilities of acquiring information upon every branch of knowledge at the present day, have given to the mind, active in the pursuit of truth, a revolution probably the most remarkable that ever occurred in the history of science. Physicians now cease to be guided altogether by authority, and instead of implicitly following the dogmatic precepts of some

ancient sage, they deduce their principles of practice from a careful investigation of established facts.

It is sometimes, however, difficult to divest the mind of the prejudices which have been imbibed with the first rudiments of education. In medical science, one of the earliest dogmas by which the mind of the medical student becomes enchained, may be considered the doctrine of critical days. This doctrine, handed down with reverence from the days of Hippocrates, and affording to the scholastic theories of fever so much appearance of mathematical precision, attracts the anxious attention of the student. When, however, the physician enters upon actual practice, he perhaps discovers that his cherished theory of critical days seems to hold good only in the fatal cases, and leaves him totally at a loss in such as have a favourable termination.\* The intimate acquaintance with the functions and pathology of the ani-

\* It appears that the functions of the human constitution in general, require a determinate period to accomplish any decided change in disease. The regular occurrence of these critical periods in unfavourable cases, may be attributed to one of two causes:—either the mode of treatment has no influence on the course of the disease, or the practitioner *indiscriminately* assists the operations of nature:—a recollection of the treatment of fever a few years past, will evince the correctness of this opinion.



mal economy, which is now so generally cultivated by the medical profession, enables the practitioner to break the chain of effects, by relieving the causes, and thus to cut short the disease before the natural course could produce a crisis.

When we contemplate the phenomena consequent on a derangement in the structure or functions of the animal frame, there may be observed a gradual developement of actions, different from those which take place in health. The morbid phenomena gradually increase in intensity, while additional symptoms make their appearance. These circumstances continue to take place until life be extinguished, or a sudden, and often violent, change be effected in the nature of the disease. A change of this kind only occurs when the morbid actions seem to have attained their acmè. Soon after, the patient experiences some relief from the general disturbance of the system, and enjoys a temporary repose.

This then constitutes a crisis : it turns out favourable or unfavourable, not according to the day of the disease on which it happens, as was supposed by the ancients, who had such limited data on which to found their judgment, but according as the part on which the change takes place is important in the general economy of the constitution.



Upon an attentive contemplation of the phenomena of fever, it will appear that four remarkable changes are liable to occur in the course of the disease.

The first is, the immediate effect of the cause of fever, whether externally applied, or generated within the body of the individual. This may continue for an hour, for some days—nay, even some weeks! To this succeeds primary reaction, indicated sometimes by acuteness of the intellectual faculties and external senses, not unfrequently amounting to pain. Restlessness soon follows, which often induces the patient to exert himself considerably beyond what his strength is capable of supporting. The presence of this stage becomes principally conspicuous in the functions of the sanguiferous apparatus; the pulse feels laboured with a sensation of throbbing, often very distressing in the head; the whole external surface appears distended, accompanied with considerable increase of heat. At this time also, there is frequently a troublesome cough, generally without expectoration.

Should the vital powers of the constitution at this period rally, a disposition to active inflammation arises: this quickly attacks some organ or apparatus, and thus changes the character of the disease. Hither the whole force of the morbid

actions are directed, and all the symptoms arise which are peculiar to acute inflammation of the affected part.

But it more frequently occurs, particularly among the inhabitants of large cities or manufacturing towns, that the general vital powers of the nervous centers still remain oppressed. Under such circumstances, when this stage has continued for a period long or short, according to the constitution of the individual or mode of treatment that has been adopted, some weak part gives way and local congestion takes place. Before this occurs there generally appears an exacerbation of all the symptoms, this, however, quickly subsides. The skin becomes relaxed, and often profuse perspiration bursts forth; the patient feels wearied, languid, and inclined to sleep; the pulse becomes feeble, sometimes quicker, but more regular, the natural evacuations take place, and thus a crisis may be observed.

This stage is frequently fatal, and upon examination of the body after death, the congestion may, in most instances, be discovered. When life is extinguished at this period, no marks whatever of active inflammation, such as coagulable lymph, pus, or recent adhesions can be detected in any part of the system.



It sometimes, however, happens, when the congestion takes place on some part not of very immediate importance to the functions of life, that the constitution being as if suddenly relieved from the oppression of general disease, quickly resumes a degree of vital energy.\* The patient at first feels as if the disease had entirely ceased, leaving only a sense of great debility. Soon, however, pains begin to fly in various directions; thirst increases; the tongue becomes brown and furred; the alvine evacuations are suppressed, or are discharged dark and foetid, quickly running on to fatal dysentery; the abdomen becomes extremely tender, sometimes accompanied with a troublesome hiccup; the head is often affected with severe pain, generally terminating in delirium; the pulse is hard, contracted, and irritable. The patients, after being wearied for some time, according to the violence or various modifications of the symptoms, expire comatose, in convulsions, or

\* Dr. Armstrong observes, that "In examples of congestive fever, there is a singular disposition to relapse, so that a patient may grow very suddenly and seriously worse, when all the previous symptoms might have led us to form a sanguine opinion. The consideration of this truth should make us pause before we give our prognosis, or at least teach us that in the severer modifications of congestive fever, the patient is not always perfectly safe until he is perfectly recovered."

ARMSTRONG ON TYPHUS, &c.



in a state of absolute exhaustion. Thus terminates the fourth stage.

When the bodies are examined after death in this stage, the most extensive appearances of inflammatory action come into view. Various adhesions and effusions occur in the membranes of the brain, or even in its substance.\* Purulent or sanious matter is sometimes met in the spinal cavity, but most generally congestion: the cavities of the thorax contain pus, and exhibit various morbid adhesions, sometimes coagulable lymph appears on the surface of the heart; in the abdomen a quantity of pus seems to have been secreted from the entire surface of the peritoneum, and the intestines appear one mass of adhesions and disease. In those cases the liver is very various in its appearances, apparently depending on its state previously to the attack of fever. The process of sanguification, in some instances, is suppressed, or totally annihilated. The gall bladder generally contains a quantity of bile intensely black; and I have frequently found the large ves-

\* It frequently happens that, on removing the dura mater, the surface of the cerebral mass will appear in various places covered with coagulable lymph. This, however, is quite a deception, for, on minute examination, an appearance will be found to arise from an effusion of a serous fluid between the arachnoid coat and pia mater.

sels near the heart to contain a sanio bilious fluid, totally unfit to perform any office of the blood.

Such ravages committed in the human constitution during the course of fever, show how important it is for the physician to be aware of their approach : he thus, by timely interference, may cut short the disease, or may reduce the violence of morbid actions into salutary efforts for the restoration of health.

In unravelling the mysteries of disease, the practitioner has it not in his power to commence by examining the most simple phenomena, and ascend from thence to the most complicated. In physiological researches, the different facts may in general be explained or elucidated by considering, first, the most simple operations of the animal economy, and then proceeding by regular progression to the examination of the most complicated functions of the human constitution. But in investigating the course and symptoms of morbid actions, man must be studied as constituted of a variety of organs, whose vital actions are performed and regulated under the influence of nervous apparatus, by means of which reciprocal communication is established throughout the animal frame.

To superficial observers, the end and aim of all



the complicated structure and functions of the brain appear only necessary to hold communication with the external world. Such observers remarking that the external senses were brought to wonderful perfection by the mere education and exercise of their proper functions, arrive at the absurd conclusion, that the functions themselves are the result of external impressions, and life the result of the functions.

By an attentive consideration of the phenomena of the animal economy, facts will be discovered which plainly evince, that life is actually the cause of organization and its consequent functions. Thus, functions are not performed until the organic structure is formed, sometimes even not until a considerable period after the particular organ has been completed ; and matter will not become organized until life be imparted to the mass. Innumerable examples of this being the established course of nature may be adduced. The organic structures relating to the functions, which become developed at the period of puberty, are completed a considerable time before they are called into action. The lungs are formed, and are perfect, before the foetus breathes; in short, every part is formed previously to its function becoming important to the individual. Organic structure evidently commences only when life is added to the mass : when the vital influence is withdrawn,



the increase of such structure is not only at an end, but the material principles of which the organs are constructed soon yield to the affinities of inorganic matter, and the whole frame is quickly decomposed.

These circumstances, therefore, showing such design in the arrangement of the animal frame, plainly evince the agency of a power far beyond the comprehension of the human mind, who, by a perfect knowledge of the universe, arranges the different organs of animated beings long before the necessities of the individual could call them into action.

Life, therefore, instead of being the result, is the ultimate principle of the animal economy, and can only be investigated by tracing its effects: from its very nature it is necessarily diffused throughout every part of the animal frame. The means by which this is accomplished appears to be through the medium of the nervous structures, for if a part be cut off from its supply of nerves, its death is the most certain consequence.

In the treatise already alluded to, I have shewn that the nervous structure in man is naturally divided into three distinct systems, of which the brain is the most extensive in its functions, and by this system the others are controlled and regu-

lated in the healthy state. As in the individual the different organs appear to be constructed and arranged previously to the necessities demanding their operations, so in the different races of animals the dispositions to their peculiar habits and propensities are implanted at their original formation. This gives rise to all the phenomena which may be observed in the inferior animals, and which are properly attributed to instinct. In man, however, the cerebral system performs far more extensive functions ; by means of the external senses, as in other animals it holds communication with the external world : it directs the powers of locomotion, and it makes choice of the different substances capable of affording nourishment, or administering to the wants of the individual. Internally the brain distributes its nerves to all the organs and structure of the animal frame ; it regulates its various operations, and makes choice of the different principles fit for the purposes of the animal economy, which have been rendered free from their former affinities by the process of digestion in the ganglionic system. However, the human race stands pre-eminent over all other animals, by means of the intellectual faculties, and by them the corporeal structure holds communication with that immortal part which “ intimates eternity to man.”



Upon a slight consideration of the faculties of the intellect, it will sufficiently appear that all their operations relate to something more than mere corporeal structure. In the inferior animals all their instinctive operations tend only to the preservation of the individual ; but in man the intellectual powers seem to bear little relation to the animal structure, a great exercise of them is injurious to the animal frame, and even moderately exercised they have considerable influence upon its growth and functions. Thus the celebrated northern physician observes, “ *neque homo ut bos ad libitum saginari potest.*”\*

The cerebral system therefore, by means of the senses, preserves the individual in relation with the external world. By means of its influence internally the different organs make choice of the principles derived from the food fit for assimilation in each peculiar structure, and by means of the intellectual functions the mere animal body is held in relation with the immortal soul.

The cerebral and spinal systems appear to be so intimately connected, that the one has been hitherto considered only the prolongation of the other. This was owing to the upper extremity of the spinal column being so completely enclosed by the cerebral mass, as to give to the former, at first view, the appearance of growing out of that

\* Gregory's Conspectus.



organ. However, the influence of the cerebral system over that of the spine does not appear to be imparted to the latter by means of this connexion; for if the cerebral nerves going to a part be divided, that part instantly ceases to obey the influence of the will, although no change whatsoever has occurred at the connexion of these systems within the cranium. In catalepsy, where the cerebral powers are almost completely suppressed, the functions of the spinal system continue in full vigour.\* This is evident by the limbs being retained in any position they are placed, without the consent or knowledge of the patient. The organs of sense communicate their peculiar impressions to the brain only when the minute extremities of the nerves are excited:—even when a nerve of sensation is divided in any part of the course to its ultimate destination, any irritation at the cut extremity will excite in the brain the sensation only which was peculiar to the organ to which the nerve was originally destined: this may be frequently observed after the amputation of a limb. It, therefore, is evident, that the brain, like the other nervous centers, only per-

\* An interesting case of the kind has lately occurred in this city to Mr. Wallace:—it was so extremely well marked as to leave no doubt that the human frame is liable to such disease. In the dissections of catalepsy which have been recorded, sanguineous congestion or effusion at the *base* of the brain has been particularly noticed.

forms its peculiar functions at the ultimate extremities of its nervous filaments.

Having thus taken a view of the functions of the cerebral system in the healthy state, in as concise a manner as the subject would admit, the deviations from health to which this system is liable during the course of fever may be ascertained by careful investigation of the symptoms.

One of the first and most obvious symptoms of fever is the absence of all characteristic expression in the countenance: this may frequently be observed long before the patient himself is aware of the impending disease. Soon the appetite is lost, or becomes depraved; I have often known patients to eat a considerable quantity of animal food immediately before a decided paroxysm of the disease, although they were averse to it for several days before. It is, however, never properly digested, but is always a cause of considerable oppression, and tends in general to increase the violence of the symptoms. Such morbid inclination to animal food may be attributed to the oppressed state of the cerebral functions, by which the individual is rendered incapable of choosing food adapted to the existing state of his digestive organs. The intellectual powers soon become confused, and I have frequently observed that patients make several mistakes in writing a day



or two before the complete developement of fever. There is often morbid sensibility over the entire surface. The contrary, however, sometimes occurs. The sense of touch may in a great measure be lost or oppressed: this may take place even to such a degree that patients in the commencement of fever will allow themselves to be blistered by the heat from the fire, near which they sit, without feeling any painful sensation.\*

It may here be necessary to observe, that when the cerebral system is debilitated, vesication is easily excited by external agents, but should that system be considerably oppressed, or its influence over a part be altogether destroyed, vesication cannot be induced by any means at present in our power. Thus vesication soon arises from a slight scald, but in a severe burn it seldom or never takes place. In great oppression of the brain or apoplexy how frequently do cantharides fail to raise a blister.

As fever advances the functions of the brain become variously modified, until delirium arises, or the patient is reduced to a state of coma.

Some cases of a papillary eruption occurred during the epidemic under consideration, which

\* This happened in my own person at the commencement of a very violent and dangerous fever.



appeared peculiarly connected with the cerebral system : it was preceded with severe pain in the head, and other indications of cerebral disease, all which quickly subsided upon the appearance of small red papillæ. These sometimes were observed in patches, but generally diffused over the surface of the body : they were most conspicuous on the breast, back, and arms. The patients described them as accompanied with a slight pricking sensation by no means disagreeable, and they were generally attended with increased temperature of the surface. These papillæ were frequently terminated by slight desquamation, but in no instance by any purulent formation.

The feel of the pulse, as indicative of cerebral affection in fever, is peculiar ; the wave of blood\* rises and sinks with regularity, conveying in general to the physician the idea of softness, although

\* The expression, "wave of blood," is to be considered as relating to the sensation afforded to the person feeling the pulse, rather than the actual state of the artery. It is known the elastic fibres of the artery do not form complete rings ; but occupy only a small portion of a circle, and each of their extremities then become interlaced with others. This structure gives the artery a tendency to elongate, rather than increase its diameter. I have no doubt, however, that both circumstances take place, as the calibre of the artery is certainly sometimes much larger than at other times.

it may be found at the same time to be full, and to be compressed with difficulty.

When blood is drawn from the arm during severe cerebral affection in fever, the surface, after coagulation, will exhibit an appearance similar to the cells of a honeycomb, generally of a bright vermillion colour. This is not to be confounded with a similar appearance of the coagulum where the serum is abundant, and almost as transparent as water, and in which the coagulum is inclined to sink to the bottom of the vessel ; such an appearance of the blood as last mentioned, results from other disease, and is not likely to be met with in fever. The observation and study of the appearances which the blood exhibits when drawn during fever, will be found highly interesting to the practitioner.

It frequently happens, that the marks of disease in the brain cannot be discerned after death, though the symptoms during life plainly indicated severe affection of the cerebral system. Diseases of this system appear to be peculiarly liable to leave no trace of organic lesion after death. I have frequently known external erysipelas to disappear after death, so as not to leave the slightest trace of disease. It is, however, to be remarked, that what has just been mentioned happens when the patient is cut off during the congestive stage ;



in the inflammatory stage, which immediately succeeds the congestive stage, the most extensive marks of inflammation may be detected.

To discriminate accurately when the spinal system is the principal seat of disease, would certainly appear necessary to the physician ; but when it is known that cases of this nature are by far the most tedious in their course, and the most difficult to be managed, accurate discrimination must be considered of the highest importance.\*

Debility in the moving powers of the animal frame, whether relating to loco motion or organic structure, is one of the most constant indications

\* It may be necessary here to mention, that the nervous apparatus which constitutes the spinal system, extends from that part of the brain which was said to be the thalami nervorum opti-  
corum, and including the cerebellum, passes along the cavity of the spine until it becomes lost in the cauda equina. All branches of nerves originating from any part of this extent, perform certain functions in the animal economy totally distinct from those which are performed by nerves originating from the brain, or ganglia of the thorax, abdomen, and pelvis. It is curious that those accurate anatomists, Doctors Gall and Spurzheim, should describe the spinal system as commencing at the foramen magnum of the occipital bone ; thus departing from their usual accurate mode of following the boundaries of nature. This appears the more extraordinary, as they were, I believe, the first who described a canal existing along each half of the spinal cord, and terminating in the optic thalami.



of spinal disease in fever; this is principally conspicuous in the weakness and tremour of the limbs. As the disease advances, and congestion takes place in the spinal canal, general tetanic spasm frequently occurs. Should the disease at this stage prove fatal, upon examining the spinal cavity after death, a vascular congestion will be discovered between the dura mater and the parietes of the canal, accompanied with a firmness of the medullary mass. Sometimes the pia mater exhibits a tissue of minute vessels, which become intensely red after a few minutes exposure to the atmosphere; it has often happened, that the lower extremities have been affected with tetanic spasms, while the upper extremities and muscles of deglutition were totally relaxed. This generally causes a difficulty of swallowing, extremely resembling the paroxysm of hydrophobia: and is particularly conspicuous when the patient attempts to swallow liquids. From the observations I have had an opportunity of making, I am led to think, that patients whose constitutions had been injured by repeated attacks of intermittents, were most liable to this affection in continued fever.

Although the experiments of Mr. Gallois, and those by Dr. Wilson Philip, do not seem to show a decided and active influence exercised by the spinal system over the functions of circulation and those of the abdominal viscera, yet morbid

affections of the spine constantly cause derangement in the functions of these organs. In caries of the vertebræ, or other cause inducing a paralytic state of the muscles of the lower extremities, it most generally occurs that the muscular coat of the alimentary canal suffers a similar disease. On examination after death, the intestines appear remarkably thin in their coats; in some places enormously distended; in other parts as remarkably contracted. In fever this frequently occurs, and may be considered the source of a dysenteric affection, which proves fatal very often long after the primary disease has been removed. In such case, when the patient dies during the fever, the nervous substance of the spinal cord appears extremely flaccid; indeed I have found it in a semi-fluid state, and in appearance totally disorganized. In some instances the canal which is said by Doctors Gall and Spurzheim to exist in each half of the nervous mass of the spine, has been easily detected, and at several parts along its course it has been found distended with a watery fluid, for the space of about a quarter of an inch.

It is extremely difficult by words to convey to another an accurate idea of the state of the pulse in disease. I have frequently made the experiment of getting several to feel the same pulse, and I am certain it would be impossible for any in-



individual to decide what kind of pulse the patient had, were he to depend only upon the description which each person gave him. From this it appears, that in all probability the sense of touch does not at all times convey the very same impressions to every individual, any more than the sense of sight. On this account, I imagine that the only possible mode of conveying to the mind of another an exact idea relative to the state of the pulse, is to describe it in general by relative terms.

Galen, who seems to have paid more patient attention to this subject than any of his successors, appears to have felt the difficulty of expressing by words the state of the pulse. He was led in his descriptions by an imaginary resemblance to things which he regarded as well known. Thus he supposed he had found a pulse which was very similar to the movement of ants, and therefore, gave it the appellation of formicans; another state received its name from the supposed resemblance to the tail of a rat, &c. The Chinese follow a similar mode of expression; this is, however, so liable to error, and giving to the study so much the appearance of conjecture, that it has been in these countries very justly exploded.

In the arts there is a coup d'œil which learners cannot discover with the greatest attention; it is

the same with the different modifications of the pulse ; they are scarcely perceptible to those who are not habituated to the examination, but become strikingly evident to those whose observation has been exercised by experience.

All the terms made use of to express the state of the pulse should be relative to the changes it is known to undergo by causes which are evident or fully established. What experienced physician does not know the modification of the pulse attendant upon compression of the brain, or that which accompanies genuine enteritis? Language, however, is very deficient in expressing what an actual feeling of the pulse conveys to the mind of the practitioner.

Solano de Lugues, who lived at Antiquera, early in the eighteenth century, published some important observations relative to the state of the pulse before a crisis ; but his descriptions were so obscure that, it is said, a celebrated physician of Cadiz visited him for the purpose of further explanation : this he found could only be done by his personal examination of the pulse under the direction of Solano. He thus became acquainted with the nature of Solano's observations, and from that time frequently made happy applications of his rules.



When an effusion into the spinal canal, or congestion in its vessels, threatens, or that either is actually present, a peculiar modification of the pulse takes place. The calibre of the artery feels expanded, affording to the touch a sense of fullness similar to what occurs from compression of the brain. The pulsation is not, however, so slow; and instead of feeling like a regular rise in the wave of blood, it appears to strike the sides of the artery, as if the vessels were not completely filled with the fluid. The coats of the artery (after the beat) do not appear to contract. I have constantly observed this kind of pulse in diseases whose seat is known to be in the spinal canal, such as caries of the vertebræ, or effusion into the spinal column, inducing paralysis. Doctor Bradley, in mentioning the early symptoms of stridor abdominalis, (which he considers a spinal disease,) in speaking of the pulse observes, "It is usually soft, varying in point of fullness, and continues slowly to increase in frequency as the complaint advances." In a note he remarks: "In estimating the pulse it will be necessary to observe, that the subjects of this complaint have often bony upper extremities, with the artery at the wrist correspondingly large."

A few years ago, when visiting a patient in this city, a gentleman of the house asked my opinion relative to an oppression of breathing, which he

said he had observed for some days before ; upon feeling his pulse it so completely conveyed to me the idea of spinal debility, that I made particular inquiry respecting the state of the spinal system in him. The result was such that I did not hesitate to say, he would probably lose the use of his limbs, and desired him to pay attention to the state of his bowels.—I ordered him an active purgative, which should be repeated when necessary.

Three months afterwards I was requested to visit him, and the following is an abstract of his case :—He was *æt.* 67 tall, but not corpulent, and drank frequently to excess. Oct. 7th, complains of almost total loss of power over the lower extremities, which seldom attain a natural warmth : considerable difficulty of breathing from phlegm, which he expectorates in great quantity in the morning, by coughing. One eye appears considerably distorted from the natural axis of vision, and he complains of seeing every thing double. He has no pain in any part. Appetite natural. Passes some nights without comfortable sleep, but never has any head-ach. Alvine evacuations not regular. Pulse soft with the calibre of the artery enlarged, and the wave of blood feeling as if it struck the coats of the vessel. Urine high-coloured and scanty. Had scaly eruption on the skin, which has disappeared for some months past.



I directed a large blister to his loins, a purgative to be taken immediately, and a mixture of acetite of ammonia, vinegar, and spirit of nitrous ether to be taken every third hour. The blister did not rise, and in three days after another was applied to the lumbar vertebræ. This occasioned a discharge of upwards of two quarts of serous fluid. Considerable relief to the general symptoms was soon observable, and by supporting the strength of the constitution by means of Peruvian bark, in about the middle of December he was well.

It sometimes happens that debility of the moving powers may induce a temporary disease in some organs, the effect of which may for a time obscure the indication by the pulse of the primary disease. A remarkable instance of this I observed in a girl, aged eleven years, who, for a long time previous to the nature of her disease being ascertained, required medicines to produce any evacuation from her bowels. I saw her only a few days before the fatal termination, when she was labouring under extensive caries of the lumbar vertebræ. It was curious to observe, that when her bowels were properly freed, the pulse indicated the affection of the spinal canal, but this state of the pulse became almost entirely obscured when the contents of the alimentary canal accumulated, and caused pain and distension of the abdomen. Upon examining this case after

death, the coats of the intestines appeared remarkably thin, indeed in some places almost transparent. The bodies of the two superior lumbar vertebræ were almost entirely destroyed by caries, and, on sawing the canal, a reddish pulpy substance appeared between the dura mater and the bony parietes: this extended a considerable distance upwards from the seat of the disease in the bones. The medullary substance was extremely flaccid, and at the angle formed by the caries, it appeared considerably diminished in size.

If it be granted that the action of the arteries is principally owing to the effect of the motion of the heart upon the elastic fibre, the influence of debility in the nervous functions of the spine upon the arteries may easily be explained. For this purpose it is only necessary to know, that the energy of the nervous influence is the source of that vigour in the arterial system which causes these vessels to contract with the strength proper to urge on their fluid contents.

A more complete example of this circumstance can hardly be met with than what is observable in a horse after severe exercise; in this animal, when in full vigour, the arch of his neck will sometimes appear almost a part of a circle, supporting the head high and steady: view him, however, after long fatigue of the powers of locomotion, and the



animal with difficulty supports his head. The ligamentum muchæ, which consists of nothing but elastic fibre, in this instance suffering from the effect of fatigue upon the powers of locomotion.

By these circumstances I am led to conclude, that a dilated state of the artery, attended with a pulse, as if the wave of blood struck the coats of the vessel, indicates that the function of the nervous mass of the spine is weakened ; and that when this occurs in fever there is effusion, or a strong disposition to it, in this part of the nervous apparatus.

In such cases, when blood is taken from the arm, it will be found to exhibit after coagulation a smooth, uniform surface, in general adhering round its edge to the sides of the vessel, so as almost entirely to conceal the appearance of the serum upon which it floats.

Petechiæ is a frequent symptom in fever, the pathology of which, I believe, is not as yet very accurately ascertained.\* Having, however, at-

\* My much lamented friend, the late Doctor Edward Percival of Bath, in his excellent paper on the Epidemic Fevers of Dublin, in the first volume of the Transactions of the Association, after mentioning that the specific circumstances which determine the respective appearances of petechiæ are unknown, says—"In truth the appearance of petechiæ, with or

tentively observed their progress, and the concomitant phenomena of disease, in some thousand cases of fever, I feel no doubt in attributing their appearance to defective energy in the spinal system. By this debility the balance in the circulating fluids is destroyed from want of strength in the vessels to resist the action of the heart, and blood becomes effused into the extreme vessels, or even into the cellular membrane. Experience has convinced practitioners, that the darker the colour of petechiæ in fever, the more danger is to be apprehended. This colour is certainly to be attributed to the defective exposure of the blood to the atmospheric influence in the lungs. One moment's observation will be sufficient to satisfy any person that the muscles of respiration do not perform their functions with sufficient effect in these cases ; but this fact obtains full confirmation when we reflect, that petechiæ most frequently occur among patients who have been confined to a close and heated atmosphere, and whose bowels are constipated. There are cases on record where petechiæ were at first the only symptom of disease, and that patients, while taking their accustomed exercise, have suddenly become exhausted,

without fever, is hitherto unexplained ;" and justly remarks—  
" That the common theory of inflammation throws as little light on these phenomena, as the obscurer doctrine of putrescence.



and have expired in a few hours. When fever has proved fatal during the appearance of petechiæ, I have universally found effusion into the air vessels of the lungs: this evidently commenced some days previous to death; the cause of this effusion however is sufficiently obvious.

It sometimes happens that the functions of the thoracic and abdominal viscera, (or what I denominate those of the ganglionic system,) are in more active energy than the functions of the cerebral or spinal systems. When this occurs during petechiæ, there is a strong disposition to form vesications, which frequently break and discharge a sanious matter. At this stage it is not unusual to observe the blood oozing from the mouth and nostrils, often accompanied with hæmorrhage from the bowels or bladder. That these symptoms may justly be attributed to debility of the spinal system, seems evident from the circumstances which may be observed in other diseases. Mr. Copeland has noticed, "That when a nerve is pressed upon, so as to induce paralysis, the most trifling injury may produce the death and sloughing of the part." Mr. John Bell remarks, "When the spinal marrow is hurt, if the patient have a wound at the same time in the lower extremities, it immediately suffers a low and livid inflammation, which falls presently into a gangrenous sore."

Another train of circumstances sometimes occur in petechiæ, when the nervous energy is equally suppressed throughout the three systems. The margins of the petechiæ become more extended, and very frequently the extremities and nose become completely blue. The indication by the pulse is then obscure, owing to the wave of blood not striking the artery with force, but giving to the touch a sensation similar to that which it does when under the influence of digitalis. Indeed the pulse feels as if the heart and arteries were unable to move the quantity of blood at that time existing in the frame, with reasonable vigour.

It may appear curious to assert, although absolutely the fact, that petechiæ, which have hitherto been considered one of the most fatal prognostics, may, in certain cases, prove the best remedy to the fever—even the only one that it is sometimes necessary to employ. This occurs when the strength of the cerebral system is roused to resist the effects of disease. The indications by which the physician is informed that the cerebral system has strength that might be employed towards the cure of the disease, principally consist (with respect to petechiæ) in the change of colour from dark approaching to bright red, accompanied with a general feel of pain, or soreness, over the surface of the body. I have had numerous cases of this kind in the epidemic at present under conside-



ration, which required, during the course of fever, no other treatment than free air, and a little purgative medicine when necessary.

Nearly allied to petechiæ are those blue spots which frequently terminate in sloughing. They occur generally upon those parts of the body, particularly about the hips and loins, which are pressed upon while the patient lies in bed. I have examined a great number of those after death, and invariably found that the diseased state of the parts extended considerably farther under the integuments than the external appearance would lead to suppose. When sloughing has occurred about the hips or neighbourhood of the lumbar vertebræ, the disorganized structure may be traced often to the very bones of the vertebral column. Upon examining the contents of the bony cavity of the spine, the nervous mass appears remarkably flaccid, and a considerably quantity of red, pulpy, or gelatinous substance, may be seen between the dura mater and bony parietes, at the part corresponding with the external disease. These facts are sufficient to prove that the mortified spots which frequently appear on patients after a tedious fever, are not altogether to be attributed to the effects of pressure or external irritation. Such an occurrence should always be considered as an indication of extreme debility in the spinal system.

Great diminution of temperature in the patient is another remarkable symptom of spinal debility in fever. Mr. Pott observes, "coldness of the thighs, not to be accounted for by the state of the weather, in the commencement of disease of the vertebræ, which, as it advances, the patient's limbs are frequently convulsed by involuntary twitchings, particularly troublesome at night; soon after this paralysis, &c. come on." This morbid coldness was so frequently noticed during the period to which I have limited these observations, that it may be considered as almost giving a peculiar character to the late epidemic. In the cases which principally affected the spinal system, extreme diminution of temperature was one of the most certain and constant forerunners of dissolution. With respect to this symptom, there are two causes which contribute to make it conspicuous in fever: the primary cause is the debility of the spinal system itself, so that the functions are interrupted, which cause the extrication of animal heat; and the want of spinal energy in the muscles of respiration, which prevents the blood from being exposed to the atmospheric influence in the lungs, so as to undergo the necessary change, may be considered a secondary, but very powerful cause of diminished temperature in fever. The temperature tending to rise above 100 of Fahrenheit, may therefore be always considered favourable, as it indicates considerable vital energy



in the spinal system. In support of the correctness of this remark, I am happy to refer to the accurate observations of Doctor Cheyne, in his excellent Report of the Hardwicke Hospital, about the same period.

The ganglionic system, which seems principally to form the connecting medium between the viscera of the thorax, abdomen, and pelvis, is a most important part of the animal economy. It is by means of the different organs relating to this system, that the substances which have been separated from the alimentary matter, are variously united, and form the different combinations which are transmitted by the vascular apparatus, to every part of the animal frame. An extensive portion of the vascular apparatus is also engaged in removing those particles which have performed their office, and have become unfit for the general economy ; for it is almost unnecessary to mention here, that during life every part of the animal frame is constantly undergoing a change. As the parts which constitute the material portions of the cerebral and spinal systems must have been assimilated by the functions of the ganglionic system, previously to their ultimate appropriation, it may be perceived what an intimate connection between the three systems must always exist. Hence derangements in the functions of the ganglionic system so frequently excite diseases in the

others, and *vice versa*. There is, however, a very material advantage derived from this circumstance, as the physician is enabled to relieve diseases of the other systems, by acting with medicine on the ganglionic viscera. It would be of very considerable importance towards establishing a judicious treatment in the diseases of the cerebral and spinal systems, were it possible to detect what ganglionic viscus held the most particular relation with the primary seat of the disease. There are some circumstances which seem to afford ground for the supposition, that the different viscera hold particular relations with distant parts of the animal frame. Certain diseases of the liver excite peculiar trains of ideas, others are attended with extreme debility. Affections of the stomach are often attended with pain in the lower part of the forehead and base of the brain. An interruption to the menstrual discharge in the female is generally attended with pain in the region of the cerebellum. At the Tonga islands, tetanus is cured by forming a seton in the urethra ; and how often does stricture in this part cause shivering and other symptoms, infinitely more severe than the most violent paroxysm of an intermittent ? This is frequently, however, checked by a dose of ether, which acts directly sedative upon the spinal system.\* Many

\* Some time since, I had an opportunity of seeing the sedative effects of this fluid on the spinal system remarkably evident in a case of tetanus. The patient had not been able to swallow



other facts may be taken in this point of view ; but there is as yet an immense extent of observation required before they could be placed under any satisfactory arrangement. This slight glance at the functions of the ganglionic system may, however, be sufficient to guide the practitioner to the symptoms which indicate their derangement in fever.

As the sensation of pain gives reason to apprehend connexion of disease with the cerebral system, so anxiety is a general indication of ganglionic derangement. Anxiety is one of the most constant symptoms in fever, and generally continues from the commencement to the termination of the disease. When an individual is affected with fever, all the functions of secretion and excretion appear to be deranged; perspiration is interrupted, or poured forth in excess; the nostrils are parched;

the smallest quantity of any thing for two days. I proposed that he should get a common enema, with the addition of one drachm of ether. This was immediately done. In a few minutes the patient said he felt a warm glow within; the spasms totally relaxed; he sat up; complained of hunger, and eat a bowl of jelly. It may be important to remark, that when practitioners see the propriety of giving stimulants of ardent spirits, &c. in disease, they should be careful not to give ether with the idea of its being more powerful, as they will be inevitably disappointed. This fluid is essentially different from ardent spirits in its effects on the animal economy, though the effect may appear stimulant in the first moment.

the secretion into the mouth becomes thick and viscid, and the air vessels of the lungs become drier than natural; the fluids of the stomach are vitiated, and the process of digestion is interrupted; the alimentary canal no longer performs its office with regularity; at first the daily evacuations cease, but this state may soon be changed to diarrhœa; the urine is variously affected, apparently depending upon the original constitution of the individual. During the epidemic, which is the immediate subject of these pages, the liver seemed to be that organ of the ganglionic system which attracted the most constant attention of the physician. The actions of this viscus appeared to be modified according as the disease was severe upon the other systems. When the cerebral system was principally affected during the disease, the liver was found after death contracted and firm in its structure; the gall bladder contained but little fluid; this was sometimes a dark coloured, pitchy substance, and did not communicate the yellow stain to the neighbouring parts after death, which is usually observed when the gall bladder is filled with the proper biliary secretion. In these cases the blood did not appear deficient in quantity, and when drawn during life, had a tendency to become rapidly coagulated.

When the spinal system was much affected, there was observed an excessive formation of



biliary secretion, while the quantity of red blood appeared to be remarkably diminished. In such cases I have found in the gall bladder a number of small spicular stones, in appearance perfectly black : on minute examination, however, these were found to consist entirely of inspissated bile, about a grain of which was capable of giving a fine yellow colour to three quarts of water. The fluid in the gall bladder was thick, and nearly resembled black oil paint ; but on being diluted with a large quantity of water, the whole became of a beautiful yellow colour. It may be extremely important for the practitioner to notice this circumstance, as in such cases the fæces may become apparently of the natural colour, although the biliary apparatus may not be in the slightest degree unloaded. The two first cases which occurred to me of this kind happened in the summer ; both proved fatal. On examination after death, the liver seemed gorged with bile, and stellated ; the sanguiferous vessels contained a considerable portion of biliary matter ; the quantity of blood contained in the vessels throughout the body was so small and so changed in its sensible qualities, as to appear scarcely capable of performing any useful function in the animal economy ; an attempt was made to take blood from the arms of both these patients, but without success. Such modification in the action of the liver indicates defective influence of the spinal system over that

viscus. This seems well to coincide with the fact, that in comparative anatomy, as we descend in the scale of animated beings, it is found that the formation of red blood ceases to occur when the animals cease to be endowed with a vertebral column or spinal system.

The spleen seemed to bear some relation to the state of the liver; for when the latter was found contracted, the spleen was observed to be considerably enlarged, and its substance was very easily torn. The structure of the pancreas did not appear to be visibly affected by fever.

In the latter stages, when patients became extremely debilitated, the mucous discharges were often very considerably increased. Many instances occurred where the function of the lungs was so completely impeded by the accumulation of mucus in the bronchial vessels, that the death of the patient appeared to be almost inevitable. The mucous secretion into the alimentary canal was at this period also very liable to become excessive, and was always accompanied with great debility of the moving fibres. When the cerebral and spinal systems were much affected during the course of fever, a dysenteric affection remained in many cases long after the general disease had been removed.



I have thus mentioned some of the most prominent symptoms which indicate ganglionic disease in fever. I have been less minute in describing this part of the disease, as it is already so well known, and in general attracts so directly the attention of the practitioner, that it is fully described in almost every book upon the subject.

In the treatment of fever, an acquaintance with the functions of the different nervous systems, and their reciprocal influence upon each other will be found of the highest importance. The operations of the various remedies which it may be necessary to employ, are not confined in general to a single system or organ ; it frequently becomes necessary to use means for the purpose of diminishing the effect of them upon the organs whose actions are not immediately desired by the practitioner ; this circumstance, when not properly attended to, may entirely defeat the intention for which the medicine was originally prescribed. In mania, tartar emetic may be taken in excessive doses without inducing vomiting, unless it be preceded or accompanied with a narcotic. Calomel given with an intention to emulge the biliary apparatus, may excite pain, accompanied with irregular distention and contraction of the alimentary canal, unless it be combined with opium or ipecacuan. It would be endless to enumerate the similar circumstances that may be met in the treatment of fever.

In health, the functions of the different organs of one system are very considerably engaged in regulating and controlling the operations of the others ; this I have before observed, gives a tendency in the general economy to resist morbid actions ; when fever becomes epidemic, innumerable instances will be met where patients recover without the interference of medical aid. These cases will be most frequent where the energy of actions in the frame have previously been reduced by abstinence, and where the patients, when ill, cannot obtain any stimulating food. During the late epidemic, it has been observed, that in the remote parts of the country, where the poor were almost entirely destitute of medical assistance, and during their fever could obtain no other sustenance than pure water, the disease was seldom fatal. In a wealthy country or populous town, the inhabitants, partaking more of the luxuries of life, had the functions more energetic, and demanded the interference of the practitioner to regulate or restrain them. The changes of the fever being more rapid here than in the former cases, it was, consequently, more fatal : these facts, however, cannot justly warrant the conclusion, that where most was done in the treatment of the disease, it was, consequently, most fatal.

The human constitution is so liable to fever, and a variety of causes so frequently excite the



disease, that many wise regulations of scientific physicians respecting its treatment, have descended among the community, and now form a mass of floating knowledge of considerable advantage to mankind. To this may be attributed the fortuitous success of irregular practitioners, who, with a little experience, may thus allow a fever to have a favourable termination ; but should the disease excite a complicated action, where the operations of some important organs require to be supported, while the energetic action of others threaten to overwhelm them in fatal destruction, “*hic labor hoc opus est.*”—Their favourite penacea, such as bleeding, or calomel, or &c. &c. fails of its wonted efficacy, another and another is tried, or perhaps all together, and the patient dies; the physician, however, places little dependance upon single remedies. In this disease, where the different circumstances require such different, often opposite, treatment, his object is to regulate the various actions, to anticipate the dangers which impend over the functions of any particular organ or structure, and by the judicious employment of remedies, cut short the disease or mitigate its violence.

It seldom happens that fever comes under the treatment of a regular physician during the first stage ; its approach is often so insidious, that the patient can seldom be persuaded to take the proper steps to ward off the impending disease.

When there is reason to suspect the attack of fever, particularly after exposure to contagion or other cause, though no particular symptom may appear predominant, it is of the utmost importance to have the patient's mind perfectly at ease. Change of scene, or pleasing society, will frequently give a vigour to the constitution capable of resisting the disease, and by gently regulating the operations of the alimentary canal, the attack may be entirely repelled; but soon as a patient appears affected by fever, absolute rest should be enjoined. Dr. Armstrong justly observes, "however mild the symptoms may be at the commencement, it is impossible to foresee to what they may finally lead, if then neglected."

In the first stage, the stomach sometimes feels oppressed with inclination to vomit; the timely administration of an emetic, which, during its operation rouses the torpid energies of the frame, may then recal the organs to energetic action; this also, by unloading the stomach of a quantity of sordes, taken in before the complete development of fever, considerably facilitates the treatment of the disease in its more advanced stages. Should bleeding be resorted to in the period of collapse, a protracted disease must be the inevitable consequence. There are so many periods of fever where this remedy may be employed with advantage, it is not surprising that it has been



often carried to excess. As the bad effects of this remedy are not immediately conspicuous, this may account for bleeding being such a favourite in empirical practice. In fever, the first time that blood-letting from the general circulation can be used without doing mischief, is just previously to the second stage, when the pulse recovers energy, and there are symptoms of general reaction. Troublesome cough, without expectoration, is at this time often observed, generally attended with sharp pain about the chest. By taking twelve or fourteen ounces of blood from the arm, the patient will feel almost immediately relieved, and by supplying him with diluents which promote a gentle diaphoresis, at the same time regulating the operations of the alimentary canal, all the symptoms are mitigated, and the disease quietly proceeds to a termination without advancing to the congestive, or third stage.

The third stage is that which generally comes under treatment in hospital practice. It is probably that in which the science of the physician is most particularly called forth. The congestion may take place in several parts at the same moment; but such morbid states will frequently attract particular attention in one situation only at a time. This when relieved, will allow another to become conspicuous, and thus the

practitioner will find it necessary to direct his treatment to different organs in succession.

When congestion has taken place upon any internal organs, and before a disposition to secondary reaction appears, no treatment can be more improper than taking blood from the general circulation : though bleeding by leeches may be of the greatest advantage, the local congestion would not be removed if every ounce of blood were taken that could be obtained by venesection. It is at this period that irregular practitioners have recourse to such excessive evacuations as are sometimes related.

When the cerebral organ is the seat of congestion, and that it is accompanied with increased temperature, cold lotions to the head are highly efficacious, at the same time promoting the evacuations from the bowels by purgatives, of which the neutral salts form a considerable portion. In some cases of this kind the patient will lie in a state approaching to coma. It may be supposed that the utility of blisters to the head would be indicated ; but a more dangerous practice can hardly be conceived : if the disease be severe, blisters to the head will not rise ; when this happens they inevitably augment the morbid state they were intended to relieve, and very often induce a fatal apoplexy. I have known the coma-



tose state continue for several days, and the patient only able to swallow his purgative medicine, the operation of which was secured by enemata, the coma then gradually changed into profound sleep, and the patient with certainty, though slowly, recovered.

Many cases were admitted into my wards during the epidemic under consideration, affected with symptoms of cerebral disease, which continued several days, until erysipelas of the face made its appearance. The treatment I adopted consisted in keeping the bowels regular, and securing the tone of the cerebral structure by a mixture of decoction of bark, vinegar, and syrup. Under this treatment the erysipelas itself required no particular attention, and the patients gradually recovered without a single unpleasant symptom.

When the force of fever is particularly directed against the cerebral system, while the other systems appear in a great measure to have escaped its violence, immediately after the primary reaction a papular eruption will often be observed over the back, breast, and loins. This, as I have already remarked, is favourable, as the head-ach and pains soon after are very much relieved. Careful and attentive observation has convinced me that this is a mode adopted by the constitution to remedy the effects of the disease, when it is

interfered with a relapse, and protracted fever is the general consequence.

The experience of ages has proved the utility of blisters for the purpose of rousing the powers of life in certain stages of fever, but it has unfortunately also proved that they may fail in producing the desired effect. Indeed the indiscriminate application of blisters in fever has frequently done mischief, and still more frequently disappointed the expectations of the practitioner in not causing any vesication whatsoever. In the third stage of fever, when symptoms of spinal oppression accompany those which indicate torpidity of the cerebral system, blisters will often prove highly advantageous, particularly when the functions of the latter system are inclined to rally. This is indicated by the petechiæ changing to a light red, and by the patient complaining of soreness or pains. If the physician should observe that these changes are slow, blisters on any part of the surface will frequently aid, in a powerful degree, the salutary action. I have known many cases of this kind where the practitioner was induced by the complaints of the patient to relieve the pain by local applications, and such treatment was invariably followed by a protracted disease. Indeed, one instance occurred where camphorated liniment was applied to relieve the pain and soreness of the lower extremities: the pain, it is true,



ceased, but the patient was dead in the course of half an hour.

Acids frequently have powerful effect upon petechiæ, in producing a rapid change in their colour, followed quickly by their total disappearance: although the acetous acid is generally employed for this purpose, diluted nitrous acid in the proportion of one drachm and half to a quart of water, may probably be found more efficacious. By spunging the body and arms of the patient with this, or any other diluted acid, when the heat is above the natural standard, symptoms of amendment soon become apparent.

It sometimes happens that the congestion takes place upon the extremities, or other external part, most generally upon the feet. Here the parts appear at first as if thickly set with petechiæ, which gradually uniting, exhibit an intensely blue or black colour. If these congestions be neglected they generally run to mortification and sloughing, when the patient rallies, and secondary reaction begins to arise. From this fact may be deduced the impropriety of stimulant applications to parts which become livid in fever. Such a treatment has been the cause in former years of patients so frequently losing the feet or toes by mortification from this disease. Many cases came into my wards with the feet and toes

almost completely black, leeches were immediately applied to the parts, and, by regulating the symptoms of the general disease, they were quickly restored to the natural state. From this it appears that much of the advantage which was derived from the old method of scarifying livid parts, arose from the local abstraction of blood.

Petechiæ may be the first symptom that particularly attracts the notice of the patient, even while he is engaged in his usual occupations. If the treatment of these cases be confined to evacuations from the bowels and spunging the body, the disease will be tedious; in some instances it has been followed by general dropsy. Four cases of this kind of petechiæ came under my management during the late epidemic: the patients were immediately bled from the arm to the extent of fourteen ounces, I then directed a mixture with diluted spirits to be taken internally, and by keeping the bowels gently regular, in a few days they were well: when the disease was very severe, or came on when the fever was advanced, the internal employment of turpentine mixtures afforded considerable advantage.

I have already endeavoured to prove that petechiæ are symptomatic of spinal debility: In the choice of internal medicine with respect to affections of this system, the attention of the practi-



tioner should be directed to those which seem to have a particular tendency to affect the viscera of the pelvis. I have mentioned that innumerable physiological facts evince that the portion of the ganglionic viscera, which holds the more immediate reciprocal influence with the spinal system, lies within the region of the pelvis. This may account for the efficacy of turpentine in the cases to which I have here alluded. When patients have been admitted in the advanced stages of fever, and life almost exhausted by the disease, so that the power of deglutition no longer remained, purgative enemata, with spirits of turpentine, have gradually recalled the vital energy of the spinal system. It is often wonderful by what a slender thread life is held to the animal frame, yet by the judicious employment of remedies the experienced physician is enabled to extend the healthy actions, as if like rays from a central point, and gradually restore vigour throughout the different systems.

Although bleeding, from the general circulation during the congestive stage, was not attended with any advantage, as far as I had an opportunity of observing, yet the local abstraction of blood by means of leeches, &c. always afforded decided benefit. An example of this fact may be interesting.

— Galaher, æt. 37, married and had children; was admitted into ward 44 on the 8th January

1819, affected with the general symptoms of fever; a state of collapse very conspicuous in her countenance; much thirst; stomach irritable; abdomen tumid, though not painful on pressure; pulse indicating spinal weakness; she was ordered imperial for drink, two ounces of the mixture with acetite of ammonia every second hour, and a purgative mixture immediately. Until the 11th there was little change; at this day the abdomen became extremely tender on pressing the hepatic region, and the pulse felt small and irritable. Leeches were applied, and she was ordered a pill of calomel and opium. The pain of the abdomen was relieved, but she was rapidly losing strength until the morning of the 13th; she now lay on her back almost insensible, and seemed to have scarcely strength to breathe. On attempting to swallow some liquid, she was nearly suffocated, and spurted it out of her mouth; her head was constantly rolling on the pillow; these symptoms plainly indicated that congestion had taken place in the upper part of the spinal canal, the rationale of which I have endeavoured to explain in the part of the treatise already alluded to, relating to hydrophobia; I therefore directed twelve leeches to be immediately applied to the spine, extending from the neck to about the middle of the back; and soon as she was able to swallow, I ordered her to take a purgative medicine of neutral salts, which should be repeated in the evening. On the 14th,



she was sitting up in her bed ; had taken her breakfast of flummery with appetite, but her pulse still indicated spinal debility, with considerable febrile irritability ; she was directed the mixture of acetite of ammonia, and half a pint of punch, daily. Under this treatment she rapidly recovered, and was discharged well on the 21st.

While endeavouring to explain the treatment of fever when affecting the spinal system, it may be useful to relate a case of this kind which had a fatal termination.

23rd June, 1818.—Madden was admitted into the hospital yesterday evening, and continued since then without variation as he now appears. He lies on his back, his head much drawn back ; his jaws rigidly closed, so as not to admit the least opening of his teeth ; his eyes closed, and the lids resist being opened, inducing considerable contraction of the brows ; when forced open, the eyes appear clear and bright, but the pupil seems little affected by light ; his limbs are rigidly extended, and his arms cannot be bent without considerable force ; at times his lower extremities are affected with trembling for about a minute ; respiration appears free ; belly soft ; pulse remarkably slow and soft ; has had no evacuation from his

bowels since he came in ; seems occasionally to swallow his saliva, but appears totally insensible to surrounding objects. I directed a blister along the spine, and twelve leeches to the temples.

Hora 8va. P. M.

The leeches have been applied with good effect; there is, however, no change in external appearance ; pulse quicker, and appears to strike the artery ; swallowed a little purgative medicine, which was introduced between his teeth ; the stiffness of his limbs is somewhat diminished, and he has moved his legs once or twice ; eyelids still closed, and resist being opened with much force. I directed a purgative enema, and ten leeches to be applied again to his temples.

June 24th.—General appearance very much improved ; now lies on his side ; his eyes open, bright, generally fixed, but seem to notice when a new object is placed before them ; he opened his mouth several times, and coughed since last visit ; took some purgative medicine this morning ; stiffness of his limbs much diminished, and he tossed about his legs several times this morning ; pulse quicker, and more of the febrile character ; as yet seems insensible to any question ; skin moist by perspiration. The blister has risen well ;



the enema has caused several stools during the night, which have been passed under him, at first nearly natural, but gradually becoming darker and more offensive; urine also passed involuntary, copious, and high coloured.

*Repetantur enema et hirudines.*

\* He was taken ill on the 16th with violent pain in his head and shoulders, attended with great thirst; on the 20th, at one o'clock, he had a considerable change for the worse; became quite stupid on Sunday, 21st, and remained so till he was admitted into the hospital.

25th, Breathing continues free; spoke last night, and now tosses his limbs a good deal; several watery stools passed involuntary; urine still high-coloured; tendons at the wrist very tense; pulse 90, somewhat hard; face and eyes rather flushed; mouth open, and swallows easily; on being asked to shew his tongue, made the attempt, but did not succeed; took an ounce of purging mixture this morning, which operated once; blister rose well, and discharges copiously.

\* His wife says, that some time before, he had a severe brain fever, and was "light in his head" ever since.

He was now directed a mixture of acetite of ammonia, and spirit of nitrous ether, every third hour.

26th, The functions of the spinal and ganglionic systems much improved ; appears more sensible, and puts out his tongue on being desired ; rather clean at the edges, but dark and dry in the centre ; alvine evacuations more natural ; pulse 90 ; skin soft, and tension at the wrist much diminished ; discharge from blister continues. Perstet.

27th, The strength and use of his limbs entirely recovered ; got up last night, walked about with some violence, and continued delirious since ; refuses to take his medicine ; much tremour in his hands on moving ; face and eyes rather flushed ; pulse 95 ; skin moist.

Ten leeches were directed to be applied to his temples, and the purgative medicine was ordered to be repeated.

28th, With some difficulty the leeches were applied ; he soon after became calm, and slept a little during the night ; passes much high-coloured urine ; one scanty stool ; pulse 98, much weaker than yesterday, and the wave seems to strike the artery ; tenderness on pressing the ab-



domen; answers more rationally; tongue moist at the top and edges; thirst.

He was ordered half a pint of punch, and to have a purgative enema, as on the 23rd inst. repeated.

29th, Yesterday evening for the first time gave notice of alvine evacuation; took the punch with much relish; dozes much; tongue cleaning, and moist; countenance nearly natural; tenderness of abdomen much diminished; urine copious, and high-coloured; skin soft; pulse 85, soft and similar to yesterday. Perstet.

30th, Febrile symptoms almost entirely subsided; seems to be affected now only with debility; sleeps much; pulse 80, soft and weak; evacuations still continue to be discharged without his giving notice.

Perstet.—Let him have one pint of punch.

July 2nd, Rather improving; bowels freed by medicine, but still passed insensibly, except once that he gave notice; his strength rather diminished, and the appearance of great emaciation; appetite returning.

Let him have one quart of beef tea—the rest as yesterday.

3rd, His breathing seems to require more exertion ; nose appears red ; the rest of his countenance pale ; loss of strength rather more conspicuous ; appears quite rational, and answers questions correctly ; cannot put his tongue out beyond his teeth ; bowels free, but still passed without notice under him.

4th, Does not now like the punch ; strength less than yesterday, so as not to be able to bear being turned in bed ; pulse much quicker, and softer ; breathes with some difficulty, though apparently without any affection of the chest, having no expectoration necessary to be thrown off. Gangrene appeared about the hips ; and on the 6th, the debility having gradually increased, he became insensible, without the power of moving any limb, and expired.

#### *Dissection.*

ABOUT six hours after death the body was examined ; a large slough appeared on the right hip, with discoloration of the integuments in the neighbourhood for some extent. The disposition to sloughing appeared to extend very much under the integuments, along the surface of the sacrum, towards the lumbar regions. No derangement could be discovered in the viscera of the abdomen.



or thorax. On dividing the integuments of the head, all the membranes appeared like dry parchment. The upper part of the skull being removed, the brain appeared very much diminished, so as not to fill the cavity of the cranium; yet the inner surface of the bone appeared to be more than usually marked by the vessels of the dura mater. The brain exhibited the usual appearance of a glairy fluid between the arachnoid coat and pia mater, that is generally met in febrile cases; the substance of the brain seemed remarkably flaccid, so that the corpus callosum was torn by merely separating the hemispheres, a small quantity of fluid was found in the ventricles. The tentorium cerebelli seemed quite relaxed, and the cerebellum was so diminished that the bony cavity was not by any means filled. The dura mater adhered for some extent to the lobes of the cerebellum, and in these places it was detached from the bone; on opening the tentorium the substance of the cerebellum appeared quite flaccid. The spinal cavity being laid open by sawing off the posterior parts of the vertebræ, the dura mater enveloping the nervous mass appeared to be unusually loose in the cavity. In the neighbourhood of the upper dorsal vertebræ it rather suddenly diminished to at least half its diameter for the extent of about one inch and a half. The dura mater covering being slit up on the posterior surface, the nervous substance itself appeared of that loose flaccid texture that I have

said was so remarkable in the brain and cerebellum. At the commencement of the cauda equina there was found a considerable extravasation of black blood, occupying a space of about two inches, with a conspicuous suffusion of red vessels on the inner surface of the dura mater, which in this case was very thin throughout its whole extent. The two canals which Doctor Spurzheim mentions to exist in the nervous mass of the spine, were in this case very conspicuous, and in several places seemed to be distended with a watery fluid.\*

With respect to the treatment of the ganglionic system, very few circumstances have occurred during the epidemic under consideration which have not been amply noticed in the prior volumes of these Transactions.

It is generally difficult to determine the organ of this system which is principally affected during the congestive stage; the treatment should, there-

\* Doctor Gœlis of Vienna, is the only author that I am aware of who gives any account of a disease such as the above. He calls it the Spinodorsitis, and seems to have met with it only in children. The appearances seen by him on dissection correspond very much with the present case. I have selected this as an example of the disease in two stages, the first of extreme irritation, the second of extreme debility. It is probable the morbid adhesions within the cranium occurred before admission into the hospital.



fore be directed generally, so as to regulate the nature of the evacuations. Soon, however, as pain in any part arises, or that it is excited by pressure, the stage of secondary reaction is to be expected: local bleeding by means of leeches now proves highly efficacious. I have had reason to imagine that the effect of leeches was more powerful than could be accounted for by the quantity of blood alone which they drew from the patient: this has been observed by Doctor Armstrong, and I have no reason to differ from his opinion. There are cases of this secondary reaction, where the process of sanguification appears to be arrested, and no blood can be obtained by opening a vein in the arm; even some cases which proved fatal, upon examination after death did not afford three ounces of proper red blood in the entire frame; yet these patients derived considerable relief during life from the application of leeches to the region of the liver. The internal medicines which appeared most efficacious in such cases, were calomel and opium combined, or a solution of tartarised antimony largely diluted. In the cases which terminated fatally while under the influence of these medicines, the internal surface of the stomach and alimentary canal exhibited a tissue of minute red vessels. It was extraordinary that this appearance extended from the stomach downwards in proportion to the length of time that the patient had been previously using these remedies.

It may not be improbable that the French writers\* of the present day, who suppose that fever is seated in the mucous membrane of the alimentary canal, have been deceived by the appearance of vascular determination, which the remedies they employed during the disease induced upon the internal surface of that canal.

I have had no cases of secondary reaction where the lungs were affected, except in patients of a florid complexion, thin skin, and light-coloured hair. In these I have always found the tincture of digitalis a most useful and powerful remedy.

In the latter periods of fever, where the disease was tedious, and the patients somewhat beyond the prime of life, effusion into the bronchial vessels often threatening suffocation, causing a blueness and tumidity of the countenance, attended with swelling of the feet or hands, sometimes occurred. In such cases the effect of sulphat of iron and ipecacuan in restoring the proper tone to the mucous surfaces was remarkably conspicuous.

In old people, where the abdomen was occasionally tender, but that considerable anxiety was always present, great relief was afforded by the

\* *Vide* Broussais's "Second Conclusion relative to Fever."



daily administration of an opiate. This, far from opposing the regular evacuations, appeared rather to assist the operation of purgative medicines.

So many pages have been already occupied, that I cannot at present extend farther the consideration of the treatment. I shall, therefore, now endeavour to investigate the means of arresting the progress of contagious fever.

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THE epidemic fever, which has been the subject of the foregoing pages, continued its course with little interruption from its first appearance to its termination. This is a strong evidence that the various publications upon the subject afforded little assistance towards ascertaining the most effectual means of arresting its destructive career. Having had opportunities of visiting the habitations of the poor, I have observed some circumstances relative to its progress which, perhaps, have not been noticed before in a similar point of view.

It is well known that the first appearance of this fever was observed after a season of long continued rains, by which the crops throughout the kingdom were almost totally destroyed. Deprived of provisions and the necessaries of life,\* the

\* In many parts of this country, the want of fuel has been a great cause of spreading the fever: the poor people being

wretched inhabitants in the lower classes, had their constitutions debilitated, and rendered obnoxious to the influence of every pestiferous effluvium to which they happened to be exposed. It is to be regretted that a fertile source of these destructive vapours is to be met in the stagnant pools, so seldom absent from the cottages of the poor.

Animal and vegetable matter, when conspiring together in a state of putrefaction, have long been known to give out exhalations most injurious to the human constitution: yet from some facts it appears, that either, separately, may long be borne with impunity.

Vegetable substances alone, require a considerable time before the putrescent process will commence, and then being in a short time totally decomposed, the putrid effluvia cannot accumulate sufficient strength to affect the human frame. The quantity of carbonic acid gas which they have previously evolved, may also, in some cases, have

destitute of fire during the wet season, were obliged to wear the clothes drenched with rain, and even to sleep under them without having been dried. This fact has been observed by my much respected friend, Doctor Brook, and agrees with the effects of wet clothes, which were remarked in some regiments during the late peninsular war.



a powerful effect in defending the atmosphere from the putrescent vapours.

With respect to the power of putrescent animal matter alone to produce disease, many circumstances may be mentioned to show that at least it is not probable. The rare occurrence of fever among those who frequent the numerous dissecting rooms in this city, may be considered one of the strongest facts against the idea, that fever should arise from putrid animal matter, unaided by other causes. A case of fever is seldom known on board the vessels employed in the whale fishery; yet here the air is often so loaded with putrescent animal effluvia, that a ship of this description may be recognized by the smell alone, when at a distance of several miles. It is true that fever is extremely frequent in the neighbourhood of extensive slaughter-houses; but here the combination of putrescent vegetable and animal matter is peculiarly conspicuous. The offal in such places consists almost entirely of blood and the vegetable contents of the alimentary canals of those animals which have been killed. M. Huzard observes, "that no carcasses putrify so quickly, and emit so much dangerous exhalation as those of herbivorous animals, as the horse, the ox, &c." He has seen numerous fatal instances of this poison among veterinary students, when they happened

to wound themselves in dissecting these animals, even within three or four days after death.\*

The powerful agency of slaughter-houses in propagating fever has been very evident during the epidemic at present under consideration. While the last slaughtering season continued, a great number of fever patients were sent to the hospitals of the House of Industry, whose habitations were in the neighbourhood of slaughter-houses. During summer, a case of fever in these places was rarely found; but shortly after the commencement of the present season (1818-19), I have had occasion to visit houses surrounded with places where this business was carried on, and not an individual was exempt from fever.† The late severe attack of fever which affected the Duke of Newcastle's family in England, is a recent example

\* PERCY on Dangers of Dissection.

† A very remarkable instance of this occurred at 55 Brunswick-street.—This house is bounded on three sides by yards where the slaughtering business is carried on; I believe it is the only dwelling house that has windows which open into these yards. Soon after this season (1818-19) commenced, application for the admission of a patient from this house being made at the House of Industry, I went to visit him; I found people sick of fever in every room in the house; none, however, were willing to go to the hospital but the person who applied: I could only, therefore, order the entire house to be whitewashed, which was accordingly done.



of the very powerful effect which putrid, vegetable, and animal matters have in propagating disease. This occurrence was justly attributed to the bottom of a newly drained pond being spread as manure upon a lawn before the house.

The celebrated Humboldt has observed, that in many parts of the South American shore, the woods extend into the sea, where an immense quantity of moluscæ are collected by the branches, and detained until putrefaction takes place. This so vitiates the air, that the surrounding country is rendered uninhabitable.\*

Numerous examples of the noxious effects of such effluvia may be met near the stagnant receptacles of filth which are to be found in almost every court and alley in this city ; many of them

\* This traveller states, that "along the northern coast of South America, the mangrove trees and others grow to the water's edge in thick forests, the roots of which give a band of yellowish tinge to the sea along the coast. It was ascertained by experiment, that the roots of these trees, moistened by the tide, and then left exposed to the sun's rays, absorb the oxygen, without leaving an increase of carbonic acid gas. No sulphurated hydrogen was given out, to which travellers attribute the smell perceived amid mangroves. The decomposition of moluscæ and other animal matter adds much to the above circumstances in making the shores unwholesome."

HUMBOLDT'S Personal Narrative, vol. 3.

are placed under houses filled with inhabitants, who being of the poorest class, with constitutions debilitated, and prone to disease, quickly feel the effects of putrid fomites arising from below.

It may be observed, that such nuisances must have existed long before the pressure of the present epidemic; a slight recollection, however, of the facts already upon the records of medicine, will probably be sufficient to explain this curious circumstance. From these it appears, that the vapours arising from putrescent animal and vegetable matter seldom become sufficiently concentrated to produce disease epidemically, without the aid of a contagious fomes. In the army, dysentery has been known to become endemic, by a few affected with that disease visiting the common privies, and has continued with violence until these places have been thoroughly cleansed. Similar circumstances may be observed with respect to other diseases.

It appears that putrescent vapours are capable of disseminating one contagious disease only at a time; as several medical writers have justly remarked, that during the prevalence of any severe epidemic, other diseases almost entirely disappear. Thus Parisi says,\* “ Besides the common symp-

\* Chap. 3. p. 70.



toms of plague, such as búbo, carbuncle, and the like, it had this common character, that while it continued, no other infirmity was perceived, or if any one was attacked with another complaint, it was immediately converted into this. The same thing was observed at Trapani, my own country, in the year 1575, that for eight months successively, the most vigilant physicians there were not able to distinguish any other infirmity besides the plague: and where tertians began to appear, it was an infallible sign that the plague had ceased." I need hardly mention that these circumstances have been very remarkable in this epidemic.

When, therefore, a contagion should arise from whatever cause, it ought to appear most active in the immediate neighbourhood of receptacles for putrescent matter. That this is the fact, abundant proofs may be seen in the north-west district of the city, where I have found such places the most certain guides to the habitations of the sick. Sir James M'Gregor remarks, in speaking of the fever at Gibraltar in 1804, "that the unhealthy circumstance, &c. was the public drain or sewer running from the barracks, which from being uncovered, and the want of water to cleanse it, was, during the heats of summer, extremely offensive. It was at this time particularly so, the barrack necessities having been emptied into it, and the contents not having run off. The huts in which

so many sick inhabitants, and some of the married people were living, were built adjoining the shore, and some immediately over it, with a single boarded floor intervening. The disorder prevailed particularly on this spot.”\*

A receptacle of this kind appears to require three weeks or a month before it can give out any very noxious vapour. To remove such nuisances should, therefore, be a primary object towards arresting the progress of any prevailing epidemic. Such reservoirs should be made to communicate with the main sewers, and by directing the water from the neighbouring houses into them, the offensive matter may be washed away, or they should be emptied at least once within a month. It must be observed, that little good could be derived from any sudden exertion, unless some permanent system were established.

When contagious fomites have been established, I need hardly remark, that all the modes hitherto adopted for their destruction are inapplicable to the houses of the poor. Even ventilation is difficult where the houses are crowded together so that the windows and doors can only be on one side. The experiments made for the purpose of detecting the noxious qualities of the air have hitherto

\* Sir James M'Gregor, 139.



afforded no satisfactory result. In all the inquiries respecting the salubrity of the atmosphere, chemists have hitherto devoted their entire attention to the oxigenous portion, as being that known to support animal life. All the tests, therefore, which have been employed, are only capable of ascertaining the quantity of oxigen in a given portion of the atmosphere, and afford no clue to the contagious fomes that may exist along with it. In proof of this, I need only at present refer to the experiments lately made at Cork, by that very accurate chemist, Doctor Davy. Equal portions of air taken from the most healthy situations, and from places highly infected, were found to afford the same quantity of oxigen. It may be important to observe, that these experiments tend to show, that contagion does not appear to influence the quantity of oxigen. A similar fact has been long since ascertained with respect to this gas in another of its combinations. When any quantity of oxigen gas is converted into carbonic acid gas, by the addition of a certain portion of solid carbon, not the slightest increase takes place in its bulk; yet the presence of carbon is evident, by the corresponding increase of weight in the compound. This gas, therefore, or any substance, used as fumigation for the purpose of supplying it, can have little effect upon the matter of contagion.

In investigations upon this subject a most material circumstance has been totally neglected. Air washed with water may be deprived of its contagious qualities, and there are numerous instances in the records of medicine, where water totally opposed the transmission of noxious effluvia so long as the putrescent matters were covered with that fluid. Senac relates a very remarkable instance of a city being afflicted with violent pestilential diseases whenever the dykes, which were the general depositaries of the offal, became dry ; but that these diseases quickly disappeared when the dykes were again filled with water. Indeed water seems to have considerable power in absorbing noxious vapours.—This may be made evident in a familiar way by exposing fresh water in a newly painted room for four and twenty hours, by which time it will contract such noxious qualities as to be quickly fatal to any animal that drinks it. The smell from putrescent matter is seldom offensive, except when the atmosphere is loaded with moisture, and ceases to be observed when the rain is formed and descends.

A fact similar to this occurs respecting fever : In Abyssinia all epidemic diseases cease during the rainy season, although at other times violent fevers are extremely prevalent. The plague at Grand Cairo is observed to diminish both in frequency and malignity about the 24th of June, at



which time, according to Mr. Bruce, a heavy dew or nukta falls in that country. In an extensive surface of putrescent effluvia fevers are most prevalent on the side that is opposed to the moist winds, which have passed over the putrescent matter.

By reflecting on these circumstances it would appear that water in the state of vapour could be most effectually applied to the contagious matter floating in the air. I am, therefore, induced to propose, that the air in the apartments where infectious fomites are supposed to exist, should be subjected to the influence of steam. This could be accomplished by various methods; sufficient steam may be raised even in the houses of the poor with little expense. Several opportunities have occurred for observing the efficacy of watery vapour in expelling the contagion of the present epidemic. The houses inhabited by washerwomen have been peculiarly exempt from fever, although it has visited every other house in their neighbourhood. Once or twice I have visited a case of fever in a room where this business was carried on: in the history of the probable cause, the patients attributed their disease to a contagious source elsewhere,\* and in no case was the fever

\* Two cases only occurred to me; the first I visited in a room in Beresford-street; he declared that he attributed

communicated to a second person, though the rooms were crowded with inhabitants. I am aware Dimmerbroek\* asserts, that during the plague of Nimeguen, the washerwomen were soon the victims of that disease. This, however, may be attributed to the effect of contagious miasmata, to which they were exposed in receiving infected clothes. Such an opinion is strongly corroborated by the fact, that not one of those who were appointed at the House of Industry to receive the clothes of the sick during this epidemic, escaped the disease. The physicians attached to fever hospitals probably owe much of their security to washing their hands immediately after touching the patients, and probably still more to the custom in this country of washing the floors a short time before they visit the wards.

Contagion is often propagated by patients returning from hospitals wearing the clothes which they had on previously to entering, when they were probably in the height of disease. Clothes of various descriptions have long been known to have a powerful effect in retaining contagious

the fever to his lying in the same bed with a man in fever in Hammond-lane, about five days before. The other patient said he got his fever by attending a friend who was sick in Francis-street.

\* Tractatus de Peste.



fomites. One of the most violent plagues that ever visited England is attributed by Doctor Parr to the effluvia from some clothes which lay concealed in a wall for a considerable time. There are circumstances which induce me to imagine that the clothes of people sick of an infectious disease, when laid by for some time without proper purification, are extremely dangerous. If I can judge from my own observation, it does not appear that the clothes which have a sour smell can easily propagate contagion, but when these are laid in a close place for a short time, without having been cleansed, they become highly deleterious. The clothes should therefore undergo some process capable of destroying their contagious property before they are returned to the patients. Although washing may be efficacious in a considerable degree, it is attended with so much trouble and expense, often with such injury to the clothes of the poor, that it may be considered not even generally applicable. It has been recommended to destroy the contagious properties of clothes by exposing them to a high temperature in ovens. The attraction which woollen materials have for atmospheric air is so strong that a temperature sufficient to expel it completely must reduce the whole substance to ashes. Exposing the clothes of the sick to a degree of heat not sufficient to injure their texture, brings to maturity the ova of vermin. In extensive hos-

pitals these increase so rapidly, and to such a prodigious extent, as to be quite incredible to those who have not witnessed it.

The exposure of the clothes to the influence of steam would appear to be the most economical and effectual mode of purification. By this means the contagious fomes is met most completely, and becomes united with the vapour. The ova of the vermin have their vitallity entirely destroyed, and thus a most disgusting nuisance is prevented.\* It is recorded that the inhabitants of Constanti-nople believe that the exposure of clothes to the dew for one night has more effect in destroying their contagious qualities, than exposing them a whole week in the sun.†

The gradual progress of a contagious fever gives some reason to imagine that it possesses considerable powers of assimilation. This would, therefore, render it necessary that the steam which

\* It may be useful to mention a curious fact respecting the effects of heated air, and of steam, upon the living body :— Patients will remain exposed to air heated to a very high temperature, without feeling inconvenienced ; but the moment a few drops of water are let upon the heated plate they instantly cry out, and would be scalded to death if they did not quit the bath.

† Report of the Committee of the House of Commons.



has condensed contagious fomes should be expelled from the clothes with the utmost expedition. By having a drying-room attached to the steam apparatus, this can be effected with the greatest facility. An apparatus of this nature should be attached to every fever hospital, which affording the best mode of purification, would also insure the clothes being properly dried before they were returned to the patients. Many of the relapses which occur in hospital practice may justly be attributed to patients putting on damp clothes immediately upon becoming convalescent.

The want of proper convalescent wards is another frequent cause of relapses, by patients returning from hospitals amid the sources of contagion, before their constitutions are strengthened by sufficient nourishment. It may be important here to consider what situation, with respect to the hospital, is best adapted for convalescent wards. It appears from what has been already said, that when the winds became loaded with humidity, they are most liable to disseminate contagion, but that this is suppressed immediately when dew or rain is formed. In most parts of Europe this has been observed with respect to the southern winds : the plague in 1812 raged in Constantinople, and throughout Asia Minor, yet although the communication between this city and Alexandria was uninterrupted, the latter re-

mained perfectly free from contagion. At the island of Scio, distant but a few hours' sail from Smyrna, where the plague was raging with violence, and from whence persons were daily arriving at the island, the British Consul, (a Greek,) observed to Mr. Leigh and his friends, "that he had no fear of infection being communicated from Smyrna, but," said he, "should the plague declare itself at Alexandria, several hundred miles distant, we shall certainly have it at Scio.\*

Doctor Jackson mentions a very important fact when describing the dreadful plague which wasted the empire of Morocco in 1799. While the disease was in the utmost violence at Magadore, the small village of Diabet, only two miles to the south-east, remained for thirty-three days uninfected, at last promiscuous intercourse conveyed the poison, and this small place, out of a population of 133, lost in twenty-one days 100 persons. Indeed the effect of moist southern winds disposing to putrefaction, was known to the Romans; Horace, therefore, in speaking of the manner in which gluttons wished to dress their dainties, in the view of promoting putrefaction, says, "*Præsentès austri coquite horum obsonia.*" Even with respect to hospital gangrene, Boyer has observed, that it may rage at any time, but is most common

\* Leigh's Travels to Egypt and Nubia.



towards the end of the great heats of summer, and when the wind has continued for a long time to blow from the south. The convalescent wards, which are essential to every fever hospital, should therefore, in this country, always be situated southward of those appropriated to fever.

A CASE  
OF  
HÆMORRHAGE,

SUPPOSED TO BE FROM

THE SPLEEN,

IN CONSEQUENCE OF INJURY DONE THAT ORGAN.

BY WILLIAM HARRISON, M. D.

LICENTIATE OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS, LATE SURGEON  
OF THE 36TH FOOT.

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*Read 6th June, 1819.*

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SERJEANT Brophy, late of the 5th Dragoon Guards, had been employed many years as rough-rider in that regiment ; a tall, thin, subject, with considerable muscular strength ; aged 50 ; fair complexion, with rather florid cheeks ; had accustomed himself to spirituous and porter drinking.

November 15, 1818, I was frequently called on during the day, but did not see him until seven



o'clock in the evening, when I found him in a very helpless state; pulse scarcely perceptible; face and lips pale; voice sunk, and articulation so indistinct as to be unintelligible; had passed a very great quantity of dark-coloured blood, mixed with other fluids, by the mouth and rectum; there were a wash hand bason and two jugs, each containing above two quarts of this fluid, with a trifling deposit of sediment, resembling the grounds of coffee; when this fluid was made to trickle down the side of the bason, it presented the red arterial colour. I then understood there had been much more passed, which they found necessary to throw away, on account of the fœtor, but it contained little fœces.

A medical gentleman had seen him during the day, and, as his wife informed me, he had told her he thought it very improbable he could survive many hours; sent him some liquid medicine, which I was told had the effect of quieting the stomach; on looking again at this fluid, I found no part had coagulated, but on the surface of one of the jugs there was a small quantity of cream-coloured fluid floating, but from the quantity I concluded, the mucous surfaces of stomach and intestines must have contributed considerably to furnish so large a quantity. I was now told there had been no coughing at the time of its passing by the mouth. On pressing the abdomen with my hand,

he did not complain of pain at any part ; I then directed him to continue his medicine ; his drinks to be quite cold ; to have cold air admitted freely into the room, and allum whey given him for drink.

Next morning found he had no return of the flowing of liquid ; but, on my examining carefully the abdomen, he complained of pain at the left lumbar region. I then ordered him to have a mild oily enema administered, which was not done until my visit in the evening, as he was afraid more blood would accompany it, which afterwards proved to be the case, as he had three evacuations in consequence of the enema, in large quantity, blended with a small quantity of fœces ; he now again was very languid.

The following day he said he had rather a comfortable night ; I now directed sulphuric acid to be given him in mucilaginous drinks.

The next day was informed he had two stools, which, on examination, was very dark-coloured, and exceedingly fœtid, diluted largely with the same fluid, and in large quantity. He was now able to inform me, that about a fortnight back, he was riding a horse which he had in training for a nobleman, at the same time leading another by the bridle, the latter started and dragged him off his seat, when he fell with violence between them.



He was then very much hurt at the region of the spleen, and had not been able since to follow his occupation, but suffered much from pain and soreness, with a scalding at the scrobiculus cordis.

On the third evening I found the heat of body much increased; pulse somewhat hard, and conveying to the finger the catgut feel, with a double stroke, the lesser quickly following the greater, (*pulsus dicrotus* of Solano.) He complained of much pain and tenderness in the splenic region, and the abdomen appeared very tense. I now considered that if a return of hæmorrhage occurred to any amount, he, in all probability, could not survive long; and perhaps I may be considered rash in determining to abstract blood by the arm, which was done to the amount of twelve ounces, *ad deliquum animi*. Cold perspiration supervened, which not a little alarmed me; however, a comfortable, calm sleep continued during that night, and the next day he expressed himself much easier.

Since this period nothing very particular occurred, but he gradually arrived to a complete state of convalescence, and is now following his occupation in very good health.

In this case, it appears to me not easy to de-

termine with any degree of certainty, whether the blood made its way in such quantity from the spleen, by the vasa brevia, into the stomach, or that an enlargement of the vessels connected to the intestines followed, and that this very large evacuation of blood took place, which afterwards became increased by a flow from the surface of the alimentary canal, holding in suspension fœculent matter.

This appears to bear no similarity to malæna, as the latter is supposed to arise from an interruption of blood from the intestines to the liver, &c.



CASES  
OF  
ERUPTIVE DISEASES.

BY DOCTOR ROBINSON.

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*Read by Dr. Grattan, 6th Sept. 1819.*

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Two instances of eruptive disease after cow-pock, lately occurred to me, which I beg leave to communicate; they have happened in such immediate connexion with two other cases of *genuine* small-pox, as seems to determine the *variolous* nature of this “modified” eruption; they also appear to exemplify a power in vaccination to alter the effect of the contagion of small-pox, where it suffers that agent to exert its force on the constitution, so materially as to render the consequent disease almost, if not altogether, a new one of mild character.

The instances which I wish to bring under your notice, were similar to the cases which have

been so well described by Doctor Hennen in the fourteenth volume of the Edinburgh Medical Journal. I cannot forbear acknowledging here how much we are indebted to that gentleman for the intelligence and candour with which he has detailed those cases, and opened the way, as I conceive, to a more correct opinion on the subject to which they refer, than has been generally entertained, and to the full re-establishment of our confidence in the *vaccine security*. I wish, however, to see the question still kept open for discussion.

It may be proper to mention the situation where I observed those cases, it being favourable for ascertaining the effects of the variolous contagion on constitutions differently circumstanced among a considerable number of children, several of them inoculated with cow-pock, a few with small-pox, some having had the latter disease naturally, while two never had either of those diseases, being collected together in a charitable institution, the Bethesda Female Orphan School, which is conducted in a range of apartments on the same floor over the Bethesda Episcopal Chapel, in this city. That apartment into which you enter from the landing-place of the stairs, being the school-room, occupies one extremity of the story; within it is the sleeping room; beyond the latter are two small apart-



ments, one of them used occasionally as a sort of family hospital, separated from each other by a short passage, upon which the door of each opens, leading to the committee room and kitchen, which occupy the other extremity of the story.

S. Garrett, who had *not undergone either kinds of inoculation, nor the natural small-pox*, on the 16th of July was attacked with fever; on the 18th an eruption appeared, which in its course exhibited the characters, and observed the regular stages of variola; the pustules were very numerous and confluent; the face was much swelled, and eyes were closed for some days. On the 28th incrustation commenced, when the fever subsided. This patient is pitted in various parts of the body.

E. Connor, *who had been vaccinated*, on the 3rd of August was attacked with fever. 4th, Fever continued. 5th, Eruption appeared. 6th, Febrile symptoms subsiding. 7th, Eruption vesicular, not numerous, distinct, containing lymph; pulse natural. 8th, Vesicles of a pearl colour, some changing to yellow. 9th, Incrustation commenced. 10th, Pustules rapidly drying on the face; some remain on the limbs; convalescent, and walking about. 11th, Some pustules still on the feet. 12th, Incrustation extended to all the

pustules. 13th, Crusts of a yellow colour ; where they have fallen off the skin appears irregularly *raised* in the centre of the spot which they had covered.

M. Montgomery, *who had been vaccinated*, on the 5th of August was attacked with fever ; in the evening an eruption, similar to that on Connor, appeared. 6th, Vesicles forming, not numerous, distinct, and containing lymph ; fever continues, but is not oppressive. 7th, Fever more excited. 8th, Vesicles of a pearl colour ; fever subsided. 9th, Nearly as yesterday. 10th, As yesterday. 11th, Vesicles changed to yellow ; incrustation commenced. 12th, Some pustules remain on the face and arms. 13th, Some of the crusts are yellow, some brownish, shining, and of a horny appearance, about a line in diameter.

M. Bartley, who had *not undergone either kinds of inoculation, nor natural small-pox*, on the 6th of August was attacked with fever. 7th, Fever increased ; complains much of her head. 8th, Fever greatly excited, considerable delirium. 9th, Eruption has appeared on the face and limbs ; state of the fever nearly as yesterday. 10th, Eruption vesicular, very numerous and confluent ; febrile symptoms less severe ; no delirium. 11th, Vesicles of a pearl colour, not much raised, contain lymph, and are of a *larger size* than those



in Connor's or Montgomery's case; fever as yesterday. 12th, Vesicles generally depressed in the centre. 13th, Pretty much as yesterday. 14th, Vesicles on the face becoming yellow; central depression still observable; face and hands swelled; eyes nearly closed; P. 128. Thirst; no appetite. 15th, Vesicles on face more yellow and rather fuller, on the arms also they are become yellow, on the lower extremities a little changed in colour, still somewhat depressed in the centre; P. 128. Thirst continues; a little appetite. 16th, Pustules on face, which are well filled, have become itchy, some rubbed off; P. 128. Thirst less; appetite improved. 17th, Pustules over the whole body well filled, yellow, and no longer depressed in the centre; P. 108. Tongue clean; no thirst; appetite increased. 18th, Pustules much distended with matter; pulse of natural frequency. 19th, Was not visited. 20th, Pustules on the arms have burst from over distention; convalescent; incrustation commenced.

Those patients were visited by Dr. Joseph Clarke and Dr. Labatt, who agreed in the opinion, that Connor's, Montgomery's, and Bartley's cases were produced by the variolous contagion, which was derived from Garrett. The distinctions, however, between the *two species* of disease, into which those cases naturally divide themselves, are very remarkable—the great mild-

ness of the one compared with the other; in Connor and Montgomery the fever was only of three days duration, in Garrett and Bartley it was of thirteen; in the two former incrustation commenced on the seventh day from the first attack, in the latter not till about the fourteen; the former are not pitted; the latter are pitted.

Although convinced, from the limits and arrangement of the school, that every child in it was fully exposed to the contagion which exhaled from Garrett during her complaint, yet in order to try the susceptibility of the children who remained in health by a still severer test, on the 15th of August, assisted by Mr. Kennedy, I inoculated with matter taken from Bartley, and inserted at her bedside 30 children of the school, of whom 18 had *many\* years before* been vaccinated; nine had the natural small-pox, and three had been inoculated with that disease. The result was the same in all—no eruptive disease was produced; no affection either constitutional or local, except a small sore with some degree of inflammation on the punctured part, which, however, did not give any trouble, and disappeared in a few days. This experiment is decisive in favour of vaccination.

\* The periods vary from six to sixteen years.



I chiefly wish to put these facts on record, as coinciding with the similar facts furnished by Doctor Hennen, which together maybe expressed under a general form, in the following conclusions:

1. That an eruptive disease is produced by the contagion of small-pox on the persons of *some*, who had undergone the vaccine inoculation:

2. That this eruption has, in a certain degree, the form, and effects the course and changes of variola, although of *shorter duration*, but is not *dangerous* to human life, and may be considered a *new\** and mild species of that disease.

3. That vaccination, as far as our experience has yet gone, appears fully capable of preventing the *fatal effects* of small-pox, and of ultimately banishing that formidable and loathsome disease from among mankind.

\* Doctor Clarke calls it, a *Hybrid*.

August 23, 1819.

A CASE  
OF  
**IDIOPATHIC EMPHYSEMA,**

BY RICHARD STANLEY IRELAND, M. D.

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*Read 6th, September, 1819.*

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IN the month of Oct. 1817, a child, ætat, nine months, was attacked with pneumonia, for which the usual remedies, bleeding, purging, blistering, &c. &c. had been tried. The violent inflammatory symptoms seemed to abate, but a troublesome cough, which very much distressed the patient, remained, after a severe fit of which (viz. on the 18th October,) a colourless swelling was remarked above the clavicles; the tumour was first thought to have been caused by the application of French leeches. The swelling suddenly increased, and extended up one side of his neck to his face; immediately after, the entire scalp became emphysematous. The parents of the child being alarmed at this unusual appearance, sent for their family attendant; I was also sent for. On our examining the tumour no



doubt remained (from the evident crepitation) of the disease being emphysema. The respiration now became much more difficult, and the cough doubly distressing. We recommended the assistance of my friend Mr. Todd, who was occasionally consulted by the family ; when we all agreed the emphysema must have been produced by the rupture of an air vesicle in the lungs from the violent exertion of coughing ; that the air became diffused through the cellular substance connecting the lobules, and afterwards insinuated itself between the pleura pulmonalis and lungs, at the root of which it escaped, and occupied the space between the two layers of the mediastinum. From thence meeting with no obstruction, the tumour appeared above the clavicles, and extended to the parts before mentioned. The pulse at this time became quicker, smaller, and indistinct, with irregular intermissions. Great distress was apparent in the child's countenance, the face became pale, and towards the end of life a livid colour, and a cold sweat broke out over the body.

The child was bled largely with leeches, which afforded great relief ; the bleeding was repeated every day during life, it uniformly diminished the distress of breathing ; purging medicines and enemata were also administered with benefit. On the 21st, the fourth day of the emphysema, the distress of breathing became so great, and the ap-

pearances so formidable, that it was proposed to make punctures or scarifications in the tumified parts, but this the mother, who herself attended the infant, would not allow, unless we promised the remedy proposed would certainly save the child's life. On the morning of the 22nd, and fifth of the emphysema, death put an end to the patient's sufferings before the medical attendants met.

I have to regret not having been permitted to examine the child after death.

I mention this case not from any thing peculiar in the disease, (which is so well described by every modern author on surgery, when arising from injuries,) but from the manner of its coming on. I have never seen a case of spontaneous emphysema from the exertion of coughing, except the one here related, nor do I recollect to have read of any. A case of emphysema without an injury of the ribs or thorax, is given in the *Memoirs de L'Acad. Royale de Chirurgie*, by M. Louis; the disease was produced by a bean falling into the trachea, which made respiration so difficult, that after a forced inspiration the emphysema appeared.

A case of spontaneous emphysema has likewise been published by Doctor Baillie, in the first vo-



lume of the Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge. The case I have briefly transcribed, for the purpose of shewing how different was the cause of emphysema in his patient, from the one I have related. The girl, who was the subject of his paper, had anasarca, accompanied with ascites. Doctor Baillie saw her two days before death, "The tumour, which was anasarcaous, he was surprised to find, become emphysematous, by the crackling of air under his fingers; the skin was much elevated, so that the pulse could scarcely be felt, the crepitation was evident all over the body; there was at the same time much water accumulated in the cellular membrane; punctures were made through the skin in different parts; the girl died next day. On examining the body after death, air was found diffused all over the body; the stomach and intestines were much distended with it; there was some air in the mediastinum, but none in the cellular membrane connecting the air-cells of the lungs. The patient said she never received any injury of her chest; the ribs were found perfectly safe and without fracture." The Doctor concludes the air was generated either by some chemical change taking place in the fluid diffused through the cellular membrane of the body, or that it was generated by secretion, as in tympanites. The latter opinion he seemed to adopt. This opinion was strengthened by a Letter published in

the third volume of the Medical Observations, by Doctor Huxham, wherein he says, “ That elastic air may be generated in the sanguiferous vessels towards the end of putrid fever, and relates a case of emphysema having arisen during the course of putrid fever, with sore throat.” I have shortly quoted the above cases of spontaneous emphysema, because I have not been able to find one analagous to that I have related. That the effects of the disease were the same as when arising from injury, is certain, as this child died of suffocation from the pressure of air on the lungs.

Dublin, 4th Sept. 1819, }  
108, Stephen's Green. }



ON AFFECTIONS  
OF THE  
CRANIAL BRAIN,  
OCCURRING IN INFANTS.

BY WHITLOCK NICHOLL, M. D. M. R. I. A.

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*Read by Doctor Brooke, Dec. 6th, 1819.*

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It is much to be regretted that the consequences of diseased action are so frequently confounded with the disease itself, and that such consequences are considered as constituting disease, while the cause from which they proceed, or, in other words, the real disease is, in many instances, entirely overlooked.

These general remarks, which are applicable to so many cases, may, with great justice, be applied to affections of the cranial brain in infants. These affections are, perhaps, by the generality of medical practitioners, treated too empirically; and they are, by all, too little understood. The

great object of dread—the object to which the attention is directed, and to which the whole plan of treatment refers, is, generally speaking, dropsy of the cranial brain, or hydrencephalus.

In many affections of the cranial brain in infants, a preternatural effusion of a watery fluid into the cavities of that substance, if it occur, is a consequence and an effect of disease; so that the practitioner, whose thoughts are turned only to this effect, may be employing means to remove an effect which has not yet taken place; or, supposing such effusion of fluid to have taken place, and supposing, also, that he can succeed in his attempts to remove that fluid, still, by so doing, he may not remove the disease, but merely one of its effects. In many affections of the cranial brain in infants, a collection of watery fluid in the ventricles of that substance does not occur, either as an effect, or as a cause of disease; in such cases, therefore, if the means which we employ are calculated only to procure a removal of effused fluid, we not only lose time by using inefficient remedies, but we assume the existence of a state which is not present. In other cases a collection of watery fluid in the ventricles has actually occurred, forming the principal, and, perhaps, the sole cause of the patient's sufferings; the collection may have taken place without any previous perceptible disease; or the precursory



disease, which induced the effusion, may have subsided, and the effused fluid may remain the sole cause of the present evil. In these last-mentioned cases, the mere empirical practitioner may succeed, for the fears inspired by the name *hydrencephalus* may prompt the adoption of a plan of treatment which has for its object the removal of effused fluid, and this object, if attained, may procure a mitigation, or a removal of the unpleasant symptoms.

There is a state or condition of the cranial brain in infants, which may be called a state of irritation, an irritated state, or, in a word, *erethism*. What this peculiar condition of the cerebral structure is, I cannot explain ; it is a state distinct from that which is called inflammation, for it may exist without any perceptible increase of the quantity of blood received by the cerebral blood-vessels. It is a state in which inordinate effects arise in the cerebral structure from ordinary impressions upon different parts of the nervous system. In its perfect form, and under a high degree of it, it is a highly sensitive condition of the cranial brain, a condition the very reverse of that state under which sleep occurs. Under such a condition of the cerebral substance, the child is wakeful, restless, attentive to every sound, and to every object of sight ; irritable in temper ; the retina is highly sensible to light ; the pupil ge-

nerally more or less contracted ; the limbs much in action ; the head suddenly moved about, or shaken from side to side ; and a degree of animation, and a quickness of observation are present, much beyond what is commonly seen in children of the same age ; so that, although a morbid condition of the cranial brain be present, the infant may be considered as particularly healthy, on account of its being lively, and sensible to the most trifling impression. By an attentive observer other symptoms may be noticed ; the child starts when asleep ; when awake, a sudden frown passes over the forehead, and then disappears ; the eyes are sometimes closed irregularly, or alternately ; a winking of one eye, or of both eyes, may sometimes be detected ; the hand is often carelessly passed over the forehead, or over the side of the head ; the child cries without any evident cause, at other times it shrieks ; the fists are clenched ; the fore-arms bent upwards on the arms. Such a state of the cranial brain constitutes the simple form of what may be termed *sensitive erethism*.

There is another form of erethism of the cranial brain in infants, in which there is a great want of animation, the child being dull, yet fretful if roused ; the head, perhaps, being suffered to droop, or being reclined on either side, there being an absence of sleep, a state that can scarcely be called waking ; an indisposition to move ; an



indifference towards all objects; a general pallor and chilliness of the body; a dull state of the eyes; a rolling or turning up of the eyes; a plaintive moan, or occasional shriek; the child awaking from sleep with a note expressive of pain or of displeasure; a wrinkled state of the integuments of the forehead; the hands raised towards the head; the pupil more or less contracted; there being apparently no notice taken of any object of sight; the body and lower extremities being, perhaps, extended; the head thrown backwards. This form of erethism may be distinguished by the term *torpid erethism*.

Erethism of the cranial brain in infants may exist as an effect of original structure of that substance. In many infants a tendency to this state appears to exist, although nothing may have occurred to call this tendency into action. Infants of a languid frame of body, connate, or acquired from depraved, or from defective nutriment. Infants, in short, of that habit, which is better known than described by the term, *scrofulous*, have a condition of the cranial brain which approaches nearly to erethism, or may readily be brought into that state.

The exciting causes of erethism of the cranial brain in infants, are numerous; among them may be reckoned, concussion of the cerebral substance

from a fall or blow ; long continued absence of sleep ; keeping the head too hot, or exposing it to the sun, or to a fire ; long continued exposure of the eyes to a high degree of light. But among the most frequent causes of erethism of the cranial brain in infants, are impressions on the anti-cerebral extremities \* of nerves, which are spread out in the substance of the liver, and throughout the alimentary canal. Thus, we find that the presence of worms ; of unnatural or of undigested food ; of an accumulation of fœces in the alimentary canal ; a vitiated state of the mucous membrane of that canal, and of its secretion ; an inactive state of the secreting apparatus of the liver ; a congestion of bile, or of blood, in the liver ; an inflamed, or otherwise diseased state of that viscus, or of other contents of the abdomen, may give rise to erethismal state of the cranial brain. The process of dentition may induce this state of the cerebral substance. An increase of the quantity of blood that circulates through the cerebral blood-vessels, may give rise to an erethismal state of the cranial brain. A more rapid circulation of the blood through the cerebral blood-vessels, arising from hurried action of the heart, may bring on this state.†

\* By anti-cerebral extremities of nerves, I mean those extremities which are the most distant from the cranial brain.

† Does torpor of the kidneys lead indirectly to the production of this state, by allowing the constituents of the urine



As on the one hand, we find that an increase of the quantity of blood that circulates through the cerebral blood-vessels, tends to the production of erethism of the cranial brain: so do we find, that erethism of the cranial brain may cause the cerebral arteries to receive more than their due share of blood. So that, after erethism of the cranial brain has existed for an uncertain time, an increase of the quantity of blood that circulates through the cerebral blood-vessels, may be superadded to the erethismal state. The combination of a great increase of the quantity of blood that circulates through the cerebral blood-vessels, with erethism of the cranial brain, constitutes that state which is called inflammation.

Inflammation of the cranial brain in infants is then, a state which includes in itself erethism of that substance; but erethism of the cranial brain in infants, may exist independently of any perceptible increase of the quantity of blood that circulates through the cerebral blood-vessels. When erethism of the cranial brain exists in combination with a great increase of the blood that circulates through the cerebral blood-vessels, such

to be retained in the blood?—That is, does blood retaining these constituents, and circulating through the cerebral blood-vessels, produce, in any degree, an erethismal state of the cranial brain?

erethism may either precede, or be superadded to that increase.

A highly sensitive form of erethism of the cranial brain in infants, coupled with a great increase of the quantity of blood that circulates through the cerebral blood-vessels, constitutes what is called active, or acute, inflammation of the cerebral substance. A less sensitive form of erethism of that substance, combined with a more moderate increase of the quantity of that blood, constitutes, probably, what had been termed a sub-acute form of inflammation of the cranial brain; and a moderate increase of the quantity of that blood joined to the more torpid form of erethism, may, possibly, constitute the chronic form of cerebral inflammation.

Inflammation of the cranial brain in infants is characterized by great heat of the head; by flushed cheeks; redness of the conjunctiva; highly contracted pupil; great intolerance of light, and of sounds; suffusion of the eyes; great restlessness; wakefulness; charged state of the blood-vessels of the head; throbbing of the arteries of the head, and throat; dry mouth; thirst; startings; shriekings; hurried, unmeaning manner, and expression of countenance; pulse throbbing, full, strong, increased in frequency.



An increase of the quantity of blood that circulates through the blood-vessels of the cranial brain, may exist simply, without any previous erethism, and without inducing erethism of that substance. Such a state constitutes simple plethora of the cerebral blood-vessels.

Simple plethora of the cerebral blood-vessels may be induced in a variety of ways:—It may arise from a general increase of the mass of circulating blood, which general increase may be a consequence of increased supply, or of diminished waste. It is possible that plethora of the cerebral blood-vessels may arise from some impediment existing to the passage of blood through those blood-vessels of the head, which are external to the cranium, in consequence of which a surplus of blood is left to find its way through the blood-vessels which pass within the cranium; or an obstruction to the passage of blood may exist in the blood-vessels in some other part of the body, as in those of the extremities, or in those of any of the viscera, in which cases an extra quantity of blood will be left to be distributed through those vessels in which no such obstruction, or a less degree of obstruction exist, and thus, an undue quantity of blood may be sent to the blood-vessels of the cranial brain. Or the arteries of the cranial brain may have their tone diminished, and, consequently, they may offer less resistance to the

entrance of blood, than is offered by other arteries, and thus, an undue quantity of blood may enter the cerebral arteries. An increase of the temperature of the head may cause the cerebral blood-vessels to receive an increased quantity of blood. An increase of the quantity of blood that circulates through the cerebral blood-vessels may be produced by certain impressions on the anti-cerebral extremities of nerves, as on those in the liver, in the alimentary canal, in the gums.

It may happen, that although the cerebral arteries receive only their natural and due share of blood, yet in consequence of some obstruction existing to the passage of that blood through the cerebral veins, in any part of their course, such blood may accumulate in those veins, or in the sinuses of the cranial brain. Such an accumulation is distinguished by the title, Congestion in the Cranial Brain.

The quantity of fluid poured out by exhalants in different parts of the body, is very much influenced by the state of the nerves in the vicinity of such exhalants. Whatever produces such a state of those nerves as is expressed, rather than explained, by the term, *irritation*, disposes the exhalants in their neighbourhood to pour out an extra quantity of fluid. In like manner, we find that erethism of the cranial brain disposes the



cerebral exhalants to pour out an increased quantity of fluid into the cavities of that substance.

In some cases, when an impression on distant anti-cerebral extremities of nerves, (such as those which are spread out in the liver, or throughout the alimentary canal,) produces such an effect at the cerebral termination of those nerves, (i. e. on the cranial brain,) as causes the cerebral exhalants to pour out an increased quantity of fluid; we find, that there are scarcely any symptoms present, which denote the existence of erethism of the cranial brain; the symptoms which arise being chiefly, if not entirely, such as may be attributed to the presence of a collection of fluid in the ventricles of the cerebral structure. And, in some of these cases, the increase of the quantity effused by the cerebral exhalants is so moderate, that a considerable length of time may elapse ere such a collection is formed as may give rise to marked and decided symptoms. In such cases, it is very probable that a collection of fluid in the ventricles may take place before any suspicion is entertained of diseased action going on in the cranial brain, or of the existence of any source of irritation in any of the contents of the abdomen.\*

\* In cases of this kind, instead of a contracted pupil, we may find the pupil of a natural size, or it may, ultimately, be dilated.

In simple plethora of the cranial brain, as the cerebral arteries receive a preternatural quantity of blood at every contraction of the heart, it follows, that an increased quantity of blood must pass from those arteries by their several terminations; and, as exhalants form a part of such terminations, an increased quantity of fluid will pass off by the cerebral exhalants, unless, indeed, the extra quantity of blood that is received by the cerebral arteries, finds a readier passage through the cerebral veins, than through those exhalants.

If any obstruction exist to the return of blood from the cranial brain by the cerebral veins, in any part of their course, and if at the same time, the cerebral arteries continue to receive their due quantity of blood only, it follows, that congestion of blood in the cerebral blood-vessels will ensue, or an increased quantity of fluid must pass from the open mouths of the cerebral exhalants, or congestion may take place, and an increased effusion by the cerebral exhalants may take place also.

In inflammation of the cranial brain in infants, there exists a two-fold cause of an undue flow of fluid from the cerebral exhalants.—In the first place, such a state includes erethism, which, as I have already stated, disposes the cerebral exhalants to pour out an increased quantity of fluid.



In the second place, the cerebral arteries, during inflammation of the cranial brain, receive an increased quantity of fluid, and, consequently, an increased quantity must pass by the terminations of those arteries, of which terminations the cerebral exhalants form a part.

A faulty state of the exhalants of the cranial brain may dispose them to give passage to a preternatural quantity of fluid.

As the fluid usually poured out by the cerebral exhalants, is, under a due and healthy action of the cranial brain and of its vessels, removed in proportion as it is effused, by which removal an accumulation of that fluid is prevented; it follows, that if the vessels, whose office it is to remove that fluid, perform that office imperfectly, an accumulation of fluid in the cavities of the cranial brain will take place, although the exhalants pour out only a due and natural quantity.

In simple plethora of the cerebral blood-vessels, there is increased heat of the head; a full eye; a redness of the countenance, together with a want of animation; a heavy, listless state; indisposition to move the head; uneasy sensation of fullness in the head, causing the child to seek support for the head; giddiness; sometimes shaking of the head; uneasy respiration; the pupil of a natural size,

or, perhaps, rather dilated ; sickness ; loss of appetite ; heat and dryness of the mouth and skin ; an inactive state of the bowels ; a sensibility to impressions, but a heedlessness of them ; a turgid state of the vessels of the head ; the pulse not much accelerated, full, perhaps oppressed.

In congestion in the cranial brain, there is a general coldness of the body ; the child throws the head backward, or leans it on either side ; the child lies in a comatose state ; the eyes prominent and fixed ; the pupils fully dilated, not contracting on exposure to strong light ; stiffness of the body, and of the limbs ; irregular actions of the muscles of the face and eyes ; a more or less entire absence of vision ; a more or less complete state of insensibility to all impressions ; torpid state of the bowels ; scanty, or suppressed secretion of urine ; pulse, for the most part, slow, and oppressed.

The symptoms brought on by a collection of fluid in the ventricles of the cranial brain, imitate very closely those which result from congestion in that substance. The train of symptoms will depend upon the preceding state of the cranial brain, of which the effusion is a consequence, upon the quantity of fluid effused, upon the rapidity with which it is effused, and upon the time that has elapsed since the effusion took place.



For we find, that although a collection of a certain quantity of fluid in the ventricles may bring on symptoms which indicate a subdued, compressed, state of the cerebral substance, yet, in a longer or shorter period of time after such collection has formed, the cranial brain may become, as it were, reconciled to the presence of such fluid, and those symptoms may gradually disappear, in a greater or less degree, and they may not return until additional effusion increases the bulk of the collection which has already formed in the ventricles. In this way all the symptoms which have been enumerated as consequent to congestion in the cranial brain, may arise from collection of fluid in the ventricles; these symptoms may subside; they may return with greater violence, until after we have been alternately alarmed and flattered by false hopes, the child is carried off by a strong convulsion, or by a series of convulsions. Or a paralytic state of the limbs, or of one side of the body, may ensue, while the muscles which are not paralyzed, may be convulsively affected. The pulse, which is slow and oppressed when the collection of fluid has just taken place, becomes afterwards struggling, feeble, and rapid.

Erethism, plethora, inflammation, and congestion, may severally so affect the cranial brain, as to bring on death without having previously produced effusion of fluid into the ventricles; or

these states may severally subside without giving rise to such effusion; or these states may severally continue, effusion being also present; or these states may cease, and effusion may remain as a consequence.

There is a state of the cranial brain which may be termed torpor, or insensibility; a state characterized by a general insensibility to impressions of every kind, and by all those other symptoms which have been enumerated as the consequences of congestion in the cranial brain, or of effusion into the ventricles.

Torpor of the cranial brain may arise from whatever causes that substance to be unduly compressed between its unyielding parietes externally, and its own blood-vessels internally. Thus it arises from a plethoric state of the cerebral blood-vessels; from congestion in the cranial brain; from a collection of fluid in the ventricles;\* (arising

\* During a state of torpor of the cranial brain, do those vessels whose office it is to remove the fluid usually effused by the cerebral exhalants, ever partake so far of the general torpor, as to perform that office imperfectly, or to cease entirely to perform it? If they do, torpor of the cerebral substance may cause a collection of fluid in the ventricles, although the cerebral exhalants pour out only a natural and due quantity of fluid.



from any of the causes already mentioned, whether erethism, simple plethora, inflammation, congestion, or a faulty state of the cerebral exhalants, or of the cerebral absorbents;) from effusion of blood; from collections of pus; from tumours; from thickening or indentation of the cranium, and the like. It may arise from concussion of the cranial brain; it may be the consequence of a preceding high degree of the erethismal state of the cranial brain; it may arise from some peculiar alteration of the cerebral structure, or from loss of a part of the cerebral substance; or it may be connected with, and dependant upon, original formation; it may arise from a loaded state of the alimentary canal, or from some morbid condition of the passage, especially of the internal membrane of the canal; from worms in that canal; from disease of the mesenteric glands; from congestion of bile or of blood in the liver, or from some other faulty state of that viscus. It may arise from loss of blood; from extreme cold; from diminished action of the heart; from disordered action of the lungs; from vitiated atmosphere; from respiring carbonic acid gas; from intoxication; from sedatives externally applied, or inwardly administered; from poisonous substances, &c.

From what I have stated, it appears that the af-

fections of the cranial brain in infants are numerous, and different in kind as well as in degree ; and that they may be arranged under the titles, Erethism, (sensitive or torpid ;) Simple Plethora ; Inflammation ; Congestion ; Collection of fluid in the Ventricles, and Torpor.

I think that I am correct in stating, that each of these conditions of the cranial brain may exist as a distinct affection, and that, in the pure, uncombined form of each of these states, each condition has distinguishing characters by which its presence is denoted. But, when we review these various conditions, and consider how they may be blended ; when we look over the list of causes from which they may severally arise, and see how many of the causes of each condition may exist at the same moment ; and when we take into the account, the influence which the various modes of treatment have upon disease, how much they alter its features, and how much they modify and interrupt the train of its symptoms ; we shall be prepared to meet with appearances very different from those which are traced upon paper, and we shall not be surprized at being called upon to treat cases, in which there is an assemblage of symptoms that baffle all our attempts at classification, and that defy all nosological distinctions.

With regard to the diagnosis in these different



states of the cranial brain, little remains to be said in addition to what has been stated under those separate heads. The appearance of the pupil is, very generally, resorted to as a test of the peculiar state of the cerebral substance, but this appearance alone will not be a sufficient guide. The degree in which the pupil is affected may depend upon the particular portion of the cranial brain which is the seat of disease. The pupil is, generally, very much contracted in simple erethism; it is particularly so in the sensitive form of erethism. In torpid erethism, the degree of contraction may depend upon the degree of torpor which is blended with the erethismal state; the pupil may, however, be much contracted, even when a considerable degree of torpor exists in combination with erethism. In simple plethora, the pupil may be of its natural size; or if the plethora has brought on torpor, it may be dilated. In plethora combined with erethism, (i. e. in inflammation,) the pupil is highly contracted, and the surface of the eye is red and suffused. In congestion, the pupil is dilated, as it is in torpor, of which latter state the former is one cause; and, in many of these cases, the presence of a powerful degree of light will scarcely, if at all, produce contraction of the dilated pupil. The continuance of the dilated state of the pupil in the presence of strong light, in these cases, distinguishes torpor of the cranial brain from that very different condition of

the cerebral structure which we sometimes meet with, under which a fully dilated pupil is seen in combination with a high degree of sensibility of the retina to light, and in which a slight degree of light will produce instantaneous, but momentary contraction of the pupil, the pupil immediately relapsing into its former dilated state. Such a state of pupil is met with in highly sensitive and debilitated persons, in whom, however, the state which I term *erethism*, may be altogether absent. A dilated pupil is frequently produced by a depraved or loaded state of the alimentary canal; by worms; by diseased mesenteric glands; or by other causes acting in the abdominal cavity, even when there are no symptoms present which particularly denote torpor of the cranial brain. Large doses of opium, which bring on torpor of the cranial brain, induce, by so doing, a dilation of the pupil; whereas moderate doses of opium, given in a healthy state of the cranial brain, or in many cases where the pupil is dilated, are found to cause contraction of the pupil. In an *erethismal* state of the cerebral substance, however, where the pupil is closely contracted, opium in moderate doses, or even in rather large doses, may, by removing that condition of the brain, remove also that high degree of contraction of the pupil which results from such condition. The juice, or the extract of the plant *Belladonna*, whether it be taken into the stomach, or be applied



to the surface of the eye, or be applied to the eyelid, or to the parts surrounding the orbit, will produce dilatation of the pupil.

The appearance of the pupil then must be taken in conjunction with other symptoms, before we can ground our diagnosis upon it. A highly-contracted pupil, with a general increase of sensibility to impressions ; with restlessness ; with an unquiet state of the head ; with startings ; with rolling of the eyes, indicates the presence of the sensitive form of erethism of the cranial brain. A highly-contracted pupil, conjoined with a general want of animation ; moaning ; pallor ; coldness ; turning up of the eyes ; a torpid state of the whole body ; denotes the existence of what I have called torpid erethism. A highly contracted pupil, together with flushed cheeks ; redness of the conjunctiva ; charged state of the blood-vessels of the head and neck ; great heat of the head, and of the body generally ; shaking of the head ; starting ; great restlessness ; intolerance of light and of sound, denotes the presence of inflammation of the cranial brain. A dilated pupil, succeeding to an erethismal state of the cerebral substance, and preceded by a highly contracted pupil, denotes torpor of the cerebral substance. A dilated pupil, appearing in the first instance, with a disordered state of the alimentary canal, whether with a relaxed, a confined, or a loaded

state of that canal, seems to point out that the primary cause of that appearance of the pupil is seated in the abdominal cavity. If pressure on the region of the liver produce uneasiness, or bring on contraction of the muscles of the lower extremities, or a twisting and shrinking of the body, or if a deficiency of bile, or a vitiated state of bile, be denoted by the appearance of the stools, the primary cause may be suspected to lie in the liver, or in its ducts. When the dilated state of the pupil is brought on by disease of the mesenteric glands, the existence of such diseased state will be denoted by a full, hard, state of the belly ; by fever ; by emaciation ; by griping pains ; by a whitish, milky, appearance of the urine, with an iridescent scum floating on the surface of that fluid. A dilated pupil, existing with general torpor of the whole system ; with constipated bowels ; with heaviness of the head ; with a comatose state ; with insensibility to impressions, points out torpor of the cranial brain in what way soever induced.

Whatever may be the form under which a diseased condition of the cranial brain in infants manifests itself, certain facts must be borne in mind, namely : That although the cranial brain appears to be the seat of disease, yet that the primary cause of the morbid condition of that substance may exist in some part far distant from the cranial brain ; as, for instance, in the neighbour-



hood of some anti-cerebral extremities of nerves which are spread out in the liver, or in the alimentary canal ; and that, as long as such cause remains, and continues to operate, it is absurd to expect to get rid of the affection of the cranial brain. Secondly, that although such cause be removed, or have ceased to operate, yet if it have existed for a considerable length of time, or have been very powerful, it may have induced a state of the cranial brain, which may remain after such cause is removed. Thirdly, that either of the states of the cranial brain which I have mentioned, may arise from various, and from very different causes. Fourthly, that the different states require different modes of treatment. And lastly, that either of these states may induce, or may pass into a different state; thus simple plethora may induce erethism, or may be induced by this last state, and, in either case, inflammation will be present. Or plethora may bring on torpor; torpor may succeed to erethism, to plethora, to inflammation, to congestion.\* Sensitive erethism may pass into torpid erethism. In inflammation, the plethoric state of the cerebral blood-vessels may subside, and erethism may alone remain.

Although we should be able, then, to ascertain

\* May not torpor of the cranial brain induce congestion in that substance ?

the precise nature of the particular affection of the cranial brain which we are called upon to treat ; although we may be able to denominate it erethism of either kind, or simple plethora, or inflammation, or congestion, or torpor ; much will yet remain to be ascertained, before we determine upon the treatment to be adopted. We must take a review of the several causes from which such particular state may arise, that we may, by ascertaining the cause of such state, direct our remedies to the removal of that cause, and may thus endeavour to get rid of the affection of the cranial brain, which has arisen from, and which is, probably, kept up by that cause ; remembering always, that, although the main object must ever be the removal of the cause of the diseased state of the cerebral substance, yet the diseased state may, as I have already said, continue, although the cause from which it arose have ceased to operate, or have been removed. We must also remember, that although the cause be still present, and still operating, we may find it necessary while we are directing the principal part of our attention to the removal of that cause, to apply remedies also, at the same time, to mitigate, or to keep under, that state of the cranial brain which has resulted from, and which is kept up by, the continued operation of that cause.

The most common affection of the cranial brain



in infants is that which I have endeavoured to express by the term, *erethism*; the other conditions of the cerebral substance being, in many cases, the consequences of previous erethism. The usual exciting causes of erethism of the cranial brain have been already noticed; the knowledge that these causes may give rise to such a state, will lead us to investigate, and to ascertain the particular cause of the case before us. Where a child is, from a habit of body, original or acquired, disposed to an erethismal state of the cranial brain; where there is precocity of intellect; where the general appearance of the child is such as is expressed by the term scrofulous; where it is known that other children of the same family have laboured under affections of the cranial brain; where there is either a highly sensitive state of the retina, with a contracted pupil; or where there is a general languor of expression with dilated pupil; in all these cases we must cautiously guard against any of those exciting causes which may call into action a morbid state of the cranial brain. We must not be lulled into fatal security by that high state of liveliness and of animation, which, in some instances, accompanies the earlier and milder stages of erethism of the cerebral substance; and we must be careful how we suffer marks of an irritable temper to pass unnoticed; and that we impute not to mere waywardness of

disposition, what is, in fact, the indication of the presence of an insidious disease.

The diet of an infant is a point of the utmost importance, yet it is one which is too often intrusted to nurses. The generality of nurses never take the process, nor the powers of digestion into account ; they think that if they can lodge a full quantity of rich food in the stomach of an infant, they pursue the most certain means of nourishing that child ; whereas they pursue the most infallible method of weakening the infant, and of engendering a diseased state of it. If a child is brought up by the hand, (to use the nursery phrase,) it is difficult to restrain the nurse from giving food of too rich a quality, or food which, at a very early age, is altogether improper. General rules, however, must not be too rigidly adhered to ; for if a diet which seems perfectly suited to the age and habit of the infant, be found to disagree, it must be changed for some other food. The milk of the mother, as it is the natural, so is it, in most cases, the most proper food, but if this be found to disagree with the child, it must be abandoned for some other diet ; the milk of another woman may be substituted, taking care that a wet-nurse be procured, whose lying-in took place, as nearly as possible, at the same time with the birth of the infant under treatment. The particular detail of rules to be observed in the



diet of infants is so well laid down already in the works of those who have treated of the management of infancy, that it is not necessary that I should enter into it. For the same reason, I find it unnecessary to discuss the subject of clothing, or that of the proper degree of the temperature of the nursery ; I cannot, however, avoid saying, that from the absurd notion of *hardening* infants, (to use another phrase of the nursery,) arises much irrecoverable evil to children of a delicate frame, many of whom appear to fall victims to the mistaken system of exposure to cold, or to have feebleness of constitution induced by it. The medical attendant should not consider attention to all these particulars as beneath his notice, for as the prevention of disease forms a more important part of his art than the removal of it, he may by strict attention to these, prevent disease, which if established, he might fail to remove, and he may lay the foundation of the future health and vigour of the child.

There are no points connected with the management of infancy which claim greater attention than the state of the alimentary canal, and the action of the liver as the secretory organ of bile. The state of the alimentary canal is very dependant upon the state of the biliary secretion. In many infants, a defective secretion of bile is observable from a very early age. In several of

these cases, the administration of medicine may procure, or rather, *force* a due secretion of bile, as long as such medicine is exhibited ; but if the use of it be suspended, even for a short time, the deficiency of bile again appears. In such cases, although the child may appear, in other respects, to be in perfect health, there will be great reason to apprehend, that sooner or later, erethism of the cranial brain will take place, (very insensibly perhaps, and almost imperceptibly,) which erethism may, of itself, be sufficient to destroy life, or may induce inflammation, which may prove fatal, or from either of these, effusion may take place, and torpor of the cranial brain may ensue. To procure a healthy action of the liver in such, and indeed in all other cases, will be an object of great importance. A depraved action of the liver being frequently induced by the long continuance of a disordered state of the alimentary canal, (as well as being a cause of such state ;) great attention must be paid to the diet, both as to its quality, and as to the quantity given at a time, and a regular and due action of the bowels must be kept up. While we ever remember that a faulty state of the secreting action of the liver, (whether such state consists of excessive, or of defective, or of vitiated secretion of bile,) influences the condition of the cranial brain, so must we not forget, that a morbid condition of the cranial brain influences the secreting action of the liver, either increasing



that action, or altering it, or lessening it; we must, therefore, be very cautious to distinguish between cause and effect in these cases; or else it may happen, that while we are endeavouring to improve the action of the liver, in order that we may remedy the condition of the cranial brain, we ought to be endeavouring to improve the condition of the latter, in order that we may produce improved action of the liver. The converse of this supposed case may also occur. The same observations are applicable to imperfect or faulty action of the alimentary canal, as connected with the state of the cranial brain. Where the digestion is imperfect, yet no fault is perceptible in the secretion of the liver, gentle carminatives, aided by small doses of rhubarb and columba will be useful; flatulency will be also corrected by these means, and the addition of a few drops of the aromatic spirit of ammonia will assist these, and will correct acidity in the canal. In children of a very languid habit, conjoined with that state which shews a tendency to erethism, we must be cautious how we administer calomel too frequently, with a view to excite due action of the liver. Perhaps calomel is, in many cases, given in repeated doses for a considerable length of time, for the express purpose of removing an appearance of the stools which is solely kept up by the calomel itself; the appearance to which I particularly allude, is the green hue, resembling that of stewed spinach, an

appearance which is frequently represented as being characteristic of such a condition of the cranial brain as terminates in hydrencephalus. Calomel is given to promote secretion of bile; it is also given where that secretion is too abundant; the evil is, that it is given in a similar manner as a remedy in these opposite states; there is no absurdity, no inconsistency, in exhibiting it as a remedy in both these states, if we adopt the mode of giving it to the particular state. For instance, if the object be to promote the secretion of bile, we should give small doses in repeated succession, so as to produce the specific effects of mercury on the liver; if we want to remove from the alimentary canal an inordinate quantity of bile which has flowed into it, we should give one powerful dose of calomel, so as to produce its effects as a strong purgative on the intestines. But, in very languid habits, in habits which shew a tendency to scrofula, to erethism of the cranial brain, if we want to promote a more copious secretion of bile, it will be more prudent to endeavour to attain that object by employing other remedies, such as nitromuriatic acid, internally and externally, or small doses of sulphat of potash, with extract of taraxacum, with a little aloetic wine. Or if we find it necessary to employ mercury to promote the action of the liver, the mercurial pill, the grey oxyde of mercury, the hydrargyrus cum cretâ, are less objectionable forms of that mineral. These seve-



ral means may be assisted by warm salt baths, by friction with salt, and by clothing the child in flannel.

If erethism of the cranial brain exist in a high degree, it will be found necessary to allay it, whatever the exciting cause of it may be.

I know no remedy more appropriate to such a state of the cranial brain as I have termed erethism, than the pulvis ipecacuanhæ compositus.\* This remedy may be advantageously combined with James's powder, especially in that affection of the cerebral substance which may perhaps be ex-

\* In protracted cases, where the erethismal condition appears to be the consequence of original formation, the long continued exhibition of opium in any form, may induce a state of marasmus, in which the countenance of the child assumes the characters of old age, the skin hanging loosely in wrinkles. In such cases, although it may be proper to have recourse to the Dover's powder from time to time, to allay any increased degree of restlessness and irritation, yet we must endeavour to keep under the constant tendency to an erethismal state by other means, as by frequent and continued exposure of the child, of its head and face especially, to a current of cool air, by spunging the body and head with cold water, or by immersion in cold water. Would swinging the child in a crib, suspended from a height, in an exposed situation, during a part of each day, tend to diminish the inordinate sensibility of the brain? The *erethismal state* being a state the opposite of *torpor*, our object will be to induce a slight degree of this latter state.

pressed by the term, *sub-acute inflammation*. Cold evaporating lotions should be constantly applied to the head ; or cold water should be poured in a continued stream on the head ; care should be taken to keep the head erect, and not to let it sink in a soft pillow. The child should be kept in a cool, quiet, darkened room, and every cause, and source, of irritation should be cautiously avoided. The action of the kidneys should be promoted by small quantities of nitre, and of the acetate of potash, in almond emulsion, to which a few drops of spirit of nitric ether may be added. The bowels may be kept open by means of mild glysters, and the child may be immersed in a tepid bath of moderate temperature.

The primary cause of erethism of the cranial brain in infants is so often seated in the gums, that we should never forget to examine the state of the mouth, and if the least fullness, or increase of redness, or of heat, be perceptible in any part of the gums, that part should be freely lanced.

In children of a full habit, if the symptoms of erethism of the cranial brain run high, leeches may be applied to the temples. But in that form of affection, which I have endeavoured to describe under the term, *torpid erethism*, where there is great general pallor and coldness, insensibility, and contracted pupil ; the abstraction of blood



will be a dangerous experiment, and may hurry our little patient out of the world. In such cases we must endeavour to combat the affection by the means already pointed out ; and, in addition to these, the head may be blistered.

In all cases of erethism of the cranial brain, we must ever be on the watch for the supervention of a plethoric state of the cerebral blood-vessels, which, combined with the erethismal state, constitutes inflammation. The means which have already been pointed out, will, very probably, prevent the accession of this state of the cerebral blood-vessels ; should it, however, come on, leeches must be freely applied to the head, or blood must, in some other way, be taken from the head. The bowels must be purged by calomel and saline purgatives, after which, James's powder, combined with calomel and nitre, may be given in repeated doses, the child being kept during the whole time in a darkened, quiet room, free from all noise and disturbance. The head must be cooled by evaporating lotions, or by the application of snow, or of ice, or in the absence of these, by wrapping towels dipped in cold water round the head. The quantity of blood to be abstracted, must depend upon the effect produced by the abstraction ; as the object is the removal of the plethoric state of the cerebral blood-vessels, if this object can be attained by the loss

of a small quantity of blood, it will be wrong to take away a greater quantity.

It may happen where an inflammatory state of the cranial brain has existed, that the remedies made use of may have removed the plethoric state of the cerebral blood-vessels, while an erethismal state of the cranial brain yet remains behind. In such a case, it will be proper to give the pulvis ipecac. comp. in liberal doses, combined with James's powder and nitre, with small doses also of calomel, or of the hydrargyrus cum cretâ. For, if the erethismal state of the brain be not allayed, the child will continue restless, wakeful, and irritable; and we may expect that the plethoric state of the cerebral blood-vessels will, sooner, or later, return, and that, in this way, the child may, at length, be worn out. It will be proper to continue the use of the Dover's powder as long as the erethismal state continues; and if, after all appearances indicating the existence of such a state have vanished, the child is wakeful, or irritable, yet if an erethismal state have lately existed, we must procure rest, and allay irritation by a continuance of the Dover's powder, in such quantities, and at such times, as may be requisite, recollecting, that there still exists a tendency to the revival of an erethismal condition of the cerebral substance, which circumstances, apparently trifling—such as loss of sleep; any error in diet;



any undue condition of the alimentary canal ; any irritation, may suddenly call into action.

Whenever, therefore, erethism of the cranial brain has lately existed, we must be more than ever on our guard to avoid, and to ward off all those causes which may give rise to such a state, or may call it into action.

In simple plethora of the cerebral blood-vessels, the grand object will be to relieve these vessels, to deprive them of their undue share of blood, and to prevent a return of their over-charged state. To accomplish these purposes, the rest of the body may be immersed in a warm bath ; blood may be taken from the head ; cold lotions should be applied to the head ; the head should be elevated ; calomel in a full dose, with James's powder, and neutral salts should be given ; and every obstacle to the return of blood from the head should be carefully removed. The several secretions should be promoted, and all those causes which may possibly produce erethism of the cerebral substance, must be carefully avoided or removed.

In congestion in the cranial brain, the jugular vein should be opened ; a warm bath should be used ; a full dose of calomel, with neutral salts ; infusion of senna, and wine of aloes, should be

given ; a stimulating glyster may be thrown up ; the several secretions should be promoted, and every obstacle to the return of blood from the head must be removed.

For the treatment of torpor of the cranial brain no one set of instructions can be laid down, the causes from which such a state may proceed being so manifold, and so various.

If a collection of fluid in the ventricles have taken place, we must combine those remedies which are calculated to procure a removal of the effused fluid, with such means as may tend to support the general strength of the system, allaying, at the same time, any irritation that may arise, palliating symptoms, and procuring rest. With these views, the scalp must be blistered, and if slight ulceration in that part be produced by the blister, the chance of relief will be increased. The several secretions and excretions must be promoted, and every method must be taken to avoid any increase of the compression to which the cranial brain is already subjected, by avoiding whatever can produce plethora or congestion in that substance, or by removing these should they exist. Mercurial preparations should be exhibited in such a way as to excite what is called, mercurial action in the system ; mercury may also be externally applied by inunction. Nitre



with digitalis may be given, and Dover's powder, combined with James's powder, with a liberal allowance of infusion of green tea, may be resorted to.

With regard to other cases of torpor of the cranial brain, proceeding from any other cause than a collection of fluid in the ventricles, or plethora, or congestion, the treatment to be pursued must depend upon the causes which give rise to it. With a view, however, to relieve the brain itself, at the same time that we are attacking the cause, or supposing the torpor of the cerebral substance to continue, after the cause has ceased, or has been removed, we may give opium in the solid form, or in the form of tincture, combined with ammonia, musk, camphor mixture, and a little wine, with infusion of green tea. The head may be blistered. *Oléum succini*, mixed with *spiritus camphoræ*, and with *spiritus ammoniæ*, may be rubbed along the spine, throughout its course. Warm, brisk, purgatives may be given, and glysters of camphor mixture, or of turpentine, and the like, may be thrown up.

THE FOLLOWING COMMUNICATION WAS RECEIVED  
FROM DOCTOR NICHOLL, AND READ BEFORE THE  
ASSOCIATION THE 2ND OF OCTOBER, 1820.

A FARMER, aged 62, a stout, full-faced man, who had lived rather freely, and had drank copiously of cider, had been long subject to cough, and expectoration, and had some months ago been seized with a paralytic affection of his right arm, the use of which he afterwards regained. He was riding to market on the 28th of August last, when he suddenly felt the fingers of his right hand grow benumbed and stiff; he continued his ride, and returned in the evening. I visited him on the 30th; he moved the upper extremity of the right side feebly, and with difficulty; the fingers were very stiff, and they felt benumbed; the face was florid; the features swollen; there was no pain nor throbbing in the head; the eyes were natural; the pulse feeble, neither frequent nor slow; the tongue covered with a loose white crust; his bowels were inclined to be costive, and powerful doses were usually required to move them. The lower extremity on the right side was not affected. He appeared rather heavy. He complained of a difficulty in expectorating the phlegm which collected in the air-passages. I



hesitated for some time, and at last I directed him to lose ten ounces of blood; he was pleased at being bled, because, he said, that he was sure it would relieve him; he expressed himself as being relieved directly after the blood began to flow—fancy might have much to do with this. I ordered him to take every four hours a strong purgative and diuretic draught, together with purgative pills; a blister was applied between the shoulders. On the next morning he continued in nearly the same state: his bowels had been freely opened, and he had passed much urine; his arm was not more under command; the muscles of the upper extremities were, every fifteen or twenty minutes, involuntary exerted. His medicines were continued. On the next day I found that the involuntary action of the pectoral and other muscles of the upper extremity was increased; when this came on, the flexor muscles of the fore-arm were much in action; there were strong twitchings of the pectoral muscle, and slight twitchings also of the muscles of the right cheek and eye. At the moment that these actions commenced, he started up in bed, became apparently insensible, the respiration was much impeded, and a gurgling noise was heard; the diaphragm being probably affected, as the muscles of the right side were. This state usually lasted about two minutes. When it ceased, he described the uneasiness as beginning in the situation of the

axillary plexus. These attacks came on every quarter of an hour. The hand was quite cramped; the fingers stiffly bent into the palm; he could with difficulty raise the arm; the bowels were freely open; the urine was secreted freely; could walk about; appetite weak. His attacks were particularly severe in the night, so much so, that he then appeared to his friends to be dying. On reflecting upon this case, it appeared to me that the source of the disordered state of my patient was an altered condition of the upper portion of the spinal brain. It did not appear that there was any plethora, congestion, extravasation, or compression of any kind. The removal of blood which I had directed rather from compliance with rules than from a conviction that it was indicated, had been followed by an increase of the affection, whatever it was. Adopting views similar to those mentioned in my former communications on the cerebral structures, I considered that the state of the upper portion of the spinal brain was such as I have termed *torpid erethism*, an increased degree of torpor succeeding to the erethismal condition, which was renewed every fifteen or twenty minutes. To use nosological terms, it was a compound of paralysis and spasm, words which denote effects rather than diseased states. I directed a scruple of pulo. ipecac. comp. to be given every night at bed-time; and in the day-time, antimonial powder, with purgatives and diuretics to be



administered. I also desired that a seton should be inserted over the cervical vertebræ, but this was not done for two or three days. On visiting him the next day, I found the fingers relaxed; the hand open and flat; he had passed a quiet night; the twitchings were very slight. He pursued this plan until September 8th. I visited him on the 10th,—he had lost all the involuntary action; the voluntary action was much stronger, indeed it was nearly perfect; his countenance good; general health much improved; ordered to take tonic medicines.

This preparation of opium, the pulv. ipec. comp. has certainly a decided good effect in all erethismal conditions of the cerebral structures. Had depletory measures been carried far in this case, the patient would probably have sunk, or the torpor might have been confirmed. Had the torpor been considered in any other light than as a consequence of, and as connected with the erethismal condition, and had it been treated with stimulants, the consequence might have also been an aggravation of the mischief. So necessary is it to look through effects to causes, and to apply our remedies to the removal of the latter.

CASE OF AMPUTATION  
AT THE  
HIP JOINT,  
FOR THE REMOVAL OF AN  
OSTEO-SARCOMATOUS TUMOUR.

BY RICHARD CARMICHAEL, ESQ.

SURGEON OF THE RICHMOND HOSPITAL, HOUSE OF INDUSTRY,  
&c. &c.

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*Read by Doctor Brooke, 5th June, 1820.*

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THE accompanying drawing will give a clearer idea than any verbal description, of the extent and appearance of a large tumour engaging the knee and greater part of the thigh of a female ; for the removal of which, I performed amputation at the hip joint, on the 20th of August 1819, three days after her admission into the Richmond Surgical Hospital. The tumour extended from just below the knee, as far up the thigh as barely to leave room for the formation of the flaps ; and the circumference of the limb, where it was most





*Mr. Carmichael's case of amputation at the hip joint.*

Chas. Maguire Sculp.





prominent, measured 27 inches. It was of a firm consistence; its surface of a pale colour, intersected by large veins, except at its lower and most prominent part, where there was some dusky redness surrounding a patch of superficial ulceration, as if arising from over-distention.

The patient was a delicate looking girl, about 19 years of age, of a fair, but now sallow, complexion. Her manner and appearance were far above her station in life, which, with the patience and fortitude she afterwards evinced, under the most trying circumstances, excited a lively interest for the success of the operation. She stated that until the attack of this disease, twelve months before her admission, she had always enjoyed good health; that its commencement was ushered in by a severe pain felt at the upper part of the tibia, soon after followed by swelling of the inside of the knee, which, gradually increasing, was attended with constant and acute pain. At this period she mentioned that issues were inserted at either side of the joint, but without any beneficial result; the swelling slowly and gradually extended on the lower part of the thigh, but three months previous to her admission the pain suddenly ceased, and at the same time the tumour made rapid and alarming advances; and it continued to increase with such celerity, that on her admission I found it necessary to call a full

meeting of the surgeons of the hospital, and other professional friends, to consider, without loss of time, if amputation would afford any probable expectation of saving her life. It was determined by this meeting that amputation at the hip joint afforded the only hope; and to this severe measure she, without much hesitation, made up her mind to submit.

The amputation was performed according to the plan recommended by my friend Mr. Guthrie, in his valuable work on Gun-shot Wounds of the Extremities, before an immense concourse of the profession and their pupils, as it was the first occasion of witnessing the operation in this city. The artery in the groin being firmly compressed by an assistant, the skin and fascia on the inside of the thigh were first divided by an incision with the large amputating knife, commencing four fingers' breadth below the anterior superior-spinous process of the ilium, and carried on the inside of the thigh to the same distance below the tuberosity of the ischium. A considerable gush of blood instantly followed from the division of those enlarged veins I have mentioned as extending over the face of the tumour, and upper part of the thigh. This hæmorrhage precluded the possibility of taking up the femoral artery in any reasonable time before the division of the muscles, so that I immediately proceeded to divide those on the in-



side of the thigh along the edge of the incision just made, by one steady stroke of the knife down to the bone.—The arterial circulation was found to have been completely commanded by the pressure in the groin, so that I was able to secure, at my leisure, the femoral artery, and three or four deep muscular branches. This being accomplished, I proceeded to connect the extremities of the incision I had made, by one on the posterior side of the limb, and then to separate the glutei muscles from the great trochanter and linea aspera. The next step was to lay bare the capsular ligament; when the assistant who held the limb, and watched the progress of the operation, immediately drew it strongly outwards, by which movement the ligament was put on the stretch, and its situation exposed by the protrusion of the round head of the bone: it was immediately divided, and the head of the femur pushed through the opening. The attachment of the round ligament was then removed, and the remaining muscles divided by passing the amputating knife behind the bone, which completed the separation of the limb from the trunk; all this was done in a much shorter period than that usually employed for a common circular amputation; a circumstance which I mention, not with the view of laying claim to the merit of any superior dexterity, but to impress my conviction, that it is an operation of easy and safe performance, and when circumstances demand

its adoption, that it should not be relinquished from any vain fears of the dangers of hæmorrhage, or the extent and depth of the parts to be divided.\*

The dislocation of the head of the bone is esteemed the most difficult part of the operation ; but there was not a moment's delay in accomplishing this object, which I attribute to the directions I had previously given to the gentleman who held the limb—to watch the steps of the operation, and to abduct the thigh as strongly as possible at the moment I proceeded to divide the capsular ligament. Diligent search was now made for divided arteries, but no more were discovered than those already secured, and it was not found necessary to take up even one on the posterior part of the stump.

The flaps were then brought together in a line from the ant. sup. spinous process of the ilium to the tuberosity of the ischium, and were found the precise extent necessary to cover the face of the wound. They were secured by three points of

\* Mr. Pott's disapproval of this operation was probably a chief cause of its being so long neglected by British surgeons ; his dissent is expressed in the following strong language :—  
“ I cannot say that I have ever done it, but I have seen it done, and am very sure I shall never do it, unless it be on a dead body.”



the interrupted suture and straps of adhesive plaister, over which were laid compresses dipped in diluted spirits of wine, and directions were given to keep them constantly wet with iced water as soon as reaction was observed to take place.

The patient lost very little blood during the operation; for the circulation was sufficiently commanded by pressure in the groin. And here I can not too strongly impress my conviction in support of Mr. Guthrie's opinion, that there is no necessity whatsoever for securing the femoral artery before amputation: it is a precautionary step which subjects your patient to two capital operations instead of one, and thus unnecessarily protracts that period of dreadful anxiety, which debilitates more than bodily pain; and is in itself a formidable evil, productive of great exhaustion, and sometimes followed by death itself, even during the performance of an operation.—And by the way, I cannot avoid observing here, that in all capital operations, the period in which a patient is detained on the table, should be as short as is at all compatible with his security; for although he may be detained merely with the view of securing the arteries, you cannot persuade him, while he is still smarting under an extensive fresh wound, that the cutting part of the operation is not still going forward, and his mind is, consequently, on the utmost stretch of apprehension, and the terror

of immediate dissolution ; nor can you remove this feeling by any exhortation while he still is occupied by the anguish arising from the handling of his wound, and the rude application of the sponge, during the search after minute vessels ; and here I may be allowed to state my belief, that the inordinate use of the sponge is often productive of more pain and inflammation than even the knife itself.

She slept well the night after the operation, and was found in every respect, on the morning of the 21st, as well as could have been hoped. 22nd, She had a tolerable night, but not so good as the preceding ; pulse 112 ; tongue moist but brown ; her bowels had been opened by medicine. She complained of a sense of tightness in the stump, but on removing some of the adhesive straps I did not observe any swelling nor tension, but was surprised to find that the entire line of the wound had united.

23rd, She had passed a good night ; pulse as yesterday. The ligatures were removed, and the integuments were found firmly adherent ; the stump, however, appeared full and distended, and it was suspected that an accumulation of serum had occurred, but the patient would not allow me to pass a probe or director through the new formed adhesions, to ascertain the fact. In the



evening, however, she became alarmingly ill ; pulse 130, with great restlessness and uneasiness ; the stump had lost its heat, and appeared greatly swoln, as if distended by some fluid ; but on introducing a director through the new formed cicatrix, there did not come any more than half an ounce of thin ichor. The cold applications were discontinued, and wine was prescribed.

On the 24th, her symptoms were still worse ; she had passed a restless night ; her countenance was bad ; pulse weak and rapid ; tongue dry and brown ; about half an ounce more of ichor came away on introducing the director, which however did not, in the slightest degree, diminish the swoln state of the stump. Brandy and water, wine and chicken broth, were ordered for her ; during the day she rallied a little, but in the evening it became evident that she was sinking, and on the following day, the 25th, at noon, she expired.

Both the amputated limb and the stump were examined ; the former the day after amputation, and the latter the day on which she died.

The fibrous structure of the muscles of the limb covering the diseased mass, which formed the tumour, was scarcely discernible, so attenuated were they by the pressure of the morbid substance which lay between them and the bone. This

substance was of different degrees of consistence : in most places it exhibited a semi-cartilaginous appearance and hardness ; while in others it was of a gelatinous structure, resembling boiled glue when congealed ; the latter entirely occupied the cavity of the knee joint, which was so distended with it, that on dividing the capsular ligament, and the ligament of the patella, it burst out as if it had been greatly compressed, occupying a much larger space when thus unconfined, and exhibiting an irregular cauliflower appearance. Interspersed through the morbid substance above the joint were several cavities, each containing from half an ounce to an ounce and a half of a glairy gelatinous fluid ; and in dissecting the tumour, the knife frequently struck against spicula of bone, which were afterwards found to radiate in considerable masses from the femur.—This bone exhibited a white, rough, diseased, appearance, denuded of periosteum from its lower extremity to the lesser trochanter.

Upon examining the stump, which was done by separating the flaps that had united through their entire extent externally, a large spongy mass, not unlike a piece of unhealthy lung, presented itself. On cutting into it we ascertained that it was the divided muscles which were thus strangely altered in so very short a space of time ; for during the operation they presented a healthy appearance. It was this swelling of the muscles which caused



the tumefaction of the stump already mentioned ; for scarcely any fluid came away previous to death, on the introduction of the probe or director.

The little ichorous matter which did pass off was ascertained to come from the upper part of the wound, where there was a considerable cavity, the bottom of which was formed by the acetabulum. The viscera of the cavities were also examined, but nothing remarkable was observed respecting them.

This case affords a well marked example of a disease accurately described both by M. Boyer and by Mr. A. Cooper, but under different denominations ; the former naming it osteo-sarcoma, and the latter fungous exostosis, of the medullary membrane ; both are, however, agreed as to its nature, and look upon it as a disease closely allied to cancer. On this point M. Boyer observes : “ Nous réserverons la dénomination d’ostéo-sarcome pour la dégénération du tissu osseux qui paroît se rapprocher le plus de l’altération et de la marche propres au cancer.——Tout ce que nous avons dit précédemment sur le traitement du cancer, s’applique sans restriction a celui de l’osteo-sarcome : ainsi l’art ne connoît aucun moyen d’arrêter les progrès de l’ostéo-sarcome une fois qu’il est déclaré, et l’on ne peut opposer à cette cruelle maladie que l’amputation du membre, ou bien un traitement palliatif.”

M. Boyer exemplifies these views, by a case of this disease affecting the thigh and knee, accompanied by drawings, which, in a remarkable manner, corresponds in almost every particular with that which is the subject of this paper.\*

As Mr. Astley Cooper's writings are in the hands of every person who has any pretension to surgical information, it may, perhaps, be only necessary to remind the reader, that he also considers this disease as closely allied to cancer. His words are : " By the fungous (exostosis) is to be understood, a tumour of softer structure than cartilage, yet firmer than fungus in other parts of the body, containing spicula of bone, malignant in its nature, depending on a peculiar state of constitution and action of vessels ; a disease somewhat similar to that which Mr. Hey has denominated Fungus Hæmatodes, but somewhat modified by the structure of the part in which it originates."†

My object in adducing the opinions of those celebrated men, is to impress upon the junior part of the profession the formidable nature, and dangerous tendency, of the malady under con-

\* *Traite des Maladies Chirurgicales*, Tom. III. Chap. XXI. Art. IV.

† Cooper and Traver's *Surgical Observat.* Vol. I.



sideration ; and the instance detailed sufficiently evinces the little reliance we can place upon amputation, except the operation can be performed at a considerable distance from the diseased mass. A circumstance which, with many other striking analogies, leaves little doubt, in my mind, of the justness of those opinions, which consider this disease as closely allied to cancer. But I shall reserve such observations as I am inclined to make on the subject for a Paper I hope to present to the Association on the varieties which exist in Cancerous Diseases, their nature, probable mode of prevention, and treatment.

ACCOUNT OF A CASE  
OF  
CYNANCHE LARYNGEA,

IN WHICH THE OPERATION OF

**Tracheotomy**

WAS PERFORMED WITH SUCCESS ;

AND OF A CASE OF ABSCESS BETWEEN THE OESOPHAGUS AND CERVICAL VERTEBRÆ,  
OBSTRUCTING DEGLUTITION AND RESPIRATION, IN WHICH THE SAME  
OPERATION WAS UNSUCCESSFUL; WITH REMARKS ON THE  
APPROPRIATE TREATMENT OF SIMILAR CASES.

BY R. CARMICHAEL, Esq. M. R. I. A.  
SURGEON TO THE RICHMOND HOSPITAL, &c. &c.

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*Read by Dr. Brooke, 5th June, 1820.*

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HAVING had occasion to perform the operation of Tracheotomy in two instances, within the course of a few days, during the present month, one of which had a successful, and the other an unfavourable termination, a detail of the circumstances attending both may not be deemed unacceptable by the Association.

The first of these cases was a patient admitted into one of Doctor Bryan's wards in the Whit-



worth Hospital, and as the symptoms and mode of treatment have been accurately noted by Doctor Cuming, who attended particularly to the case, I shall lay before the Association the statement which that gentleman has been so kind as to put into my hands.

“Judith Mahony, æt. 30, of a robust habit and sanguine temperament, was admitted into the Whitworth Hospital on the evening of the 8th of May, affected with a dull pain in the region of the larynx, and a sensation of constriction about the os hyoides and epiglottis, which greatly impeded respiration.

Each inspiration was lengthened, stridulous and sonorous, performed with great effort, and attended with a convulsive elevation of the chin, and consequent elongation of the trachea. Expiration was performed with ease. The voice was hoarse, and speaking was observed to aggravate the difficulty of breathing. She had little cough, but was frequently hawking up a tough, yellowish mucus. Her deglutition was little impeded, but she complained of some pain on swallowing. Externally there was no observable tumour, nor did pressure upon the region of the larynx occasion pain. Upon examining the internal fauces, the mucous membrane appeared slightly increased in vascularity. The right

tonsil was enlarged, and the uvula which appeared rigid, had its tip looking forwards, and placed at right angles with the velum. The tongue was slightly furred, and upon making pressure on its root with the shaft of a spoon, in order to obtain a more complete view of the mouth and fauces, the patient twice remarked, that she felt her breathing relieved, owing, no doubt, to an increase in the area of the glottis during the pressure. The pulse was about 108 in the minute, and rather contracted. The bowels had been freed by medicine.

The account which the patient gave of herself was, that about six days previous to her admission, after leaving off a cap, which she had been in the habit of wearing, she was seized with pains in both ears, which were soon followed by the symptoms of laryngitis.

With a view to clear the bronchial tubes of the mucus and phlegm with which they seemed to be oppressed, an emetic, consisting of 20 grains of ipecacuanha and 1 of tartar emetic, was immediately prescribed, and 1 ounce of the following solution was directed to be taken every fourth hour :

R—Misturæ Camphoræ Uncias sex, Antimonii Tartar : granum—solve.

The emetic operated well, and produced a considerable discharge of mucus ; but she passed



a sleepless night ; the difficulty of breathing was by no means alleviated, and she was, for the most part, obliged to sit erect in bed, from an impending sense of suffocation.

On the morning of the 9th, twelve leeches were applied to the external fauces ; these, however, failing to produce any decided benefit, 14 more were immediately laid on, and the quantity of blood drawn was considerable. No impression, however, seemed as yet to be made on the disease ; the inspirations became more and more sonorous and convulsive ; the countenance was expressive of the greatest distress ; and the patient in the agony of her suffering, was most earnestly imploring the attendants to do something that might afford her relief.

A bolus, containing five grains of calomel and one-third of a grain of opium, was now administered, and directed to be repeated every third hour. A blister was also ordered for the throat, but its application was for some time deferred, in order that if the symptoms should become more urgent, it might not interfere with the operation of tracheotomy, which was in contemplation.

About half-past five o'clock in the afternoon, as the distress still continued unabated, and the danger of suffocation became every minute more

imminent; Mr. Carmichael was called upon, who instantly proceeded to perform the operation.—An opening was made into the trachea, in that space which intervenes between the inferior edge of the thyroid gland, and the superior extremity of the sternum. During the performance of the operation, the quantity of blood lost was very inconsiderable.\*

\* The external incision was about an inch and a half in length, and the hæmorrhage was so inconsiderable that there was not more than half an ounce of blood lost during the operation; for owing to the steadiness of the patient, and a clear light, the large veins on the fore part of the trachea were distinctly seen, and avoided. The incision into the trachea was first made by dividing the membranous substance between two of the rings; then the inferior of the two was divided by a perpendicular incision, and this opening was enlarged by laying hold of one edge of the divided ring with a forceps, drawing it forwards, and cutting off a slice with the knife.—A similar piece being removed from the other edge of the divided ring, a square opening was left sufficiently large not only for the easy passage of air, but of mucus—a circumstance of the greatest moment with respect to the success of the operation, for if the opening should not be large enough to admit of the expulsion of mucus, a recurrence of a state of suffocation must ensue from its accumulation in the trachea and larynx, as there is little chance of its being expelled by the glottis, now that the patient breathes through the wound in the trachea. The removal of a piece of one or two of the rings, as recommended by Mr. Laurence, is therefore, in my opinion, far preferable to the introduction of a canula, for the latter is not only a source of great distress, but is by no means equal to the other for ad-



As soon as the trachea was perforated, the air rushed out with a peculiar hissing noise, and upon enlarging the opening from above, downwards, and cutting out a small portion of the cartilage, the change which took place in all the symptoms was as beneficial as it was immediate. The countenance, which before the operation was of a pallid hue, and expressive of the utmost anxiety, suddenly resumed its natural appearance ; and inspiration, which had been previously attended with so much difficulty, was now performed with apparent ease through the artificial opening. That convulsive elongation of the trachea, which before attended each inspiration, was now completely removed ; and the pulse, which had previously been about 108 in the minute, fell to 90. The patient, though now incapable of speaking, sufficiently evinced by signs how much she was relieved.

On being replaced in bed, and propped up in the erect position with pillows, she soon fell asleep, and continued dozing during the remainder of the evening. On awaking, it was found that she

mitting of the easy exit of mucus. If we are contented with merely dividing the membranous substance which connects the rings, recourse must be had to the canula, as the opening will soon become clogged with mucus in spite of all the efforts of the patient to expel it ; and for obvious reasons we should prefer a canula of as large a diameter as can be introduced.

R. C.

swallowed with ease, and having signified a desire to smoke tobacco, she was gratified with a pipe. The edges of the external wound were kept separate by tin retractors covered by adhesive plaister, which were connected to each other by two strings tied behind the neck. A canula had been introduced into the aperture in the trachea, but the excessive irritation which it occasioned rendered its immediate removal necessary. At bed-time she had a draught, containing twenty drops of laudanum; and the calomel boluses, of which she had only taken one, were ordered to be discontinued.

During the night she slept well, and breathed with tolerable ease. At four o'clock of the morning of the 10th, she rejected a considerable quantity of mucus, mixed with coagula of blood, from the mouth. At breakfast-time she took two cups of tea, and a little bread with appetite; and she continued pretty well till about 12 o'clock at noon, when, in consequence of the accumulated mucus, which obstructed the aperture in the trachea, the breathing became again laboured, and attended with somewhat of the same convulsive-like inspiration and peculiar hooping sound, which existed before the operation. The voice had, to a certain extent, returned, and she was able at times to articulate distinctly.



A probe wrapped round with lint was introduced into the aperture, by which the mucus was from time to time removed, and the external wound was kept clean by sponging. The difficulty of breathing, however, continually recurred, and the efforts to expectorate by the mouth were frequent and ineffectual. A considerable quantity of mucus escaped through the opening in the trachea, and it was observed, that when the opening was completely obstructed by the sponge, the patient was occasionally able to get up some mucus, and reject it by the mouth.

The difficulty of breathing continuing to increase, a bistoury was introduced in the evening, by which the opening was enlarged upwards. The good effects of this enlargement became soon evident, for the patient lay down on her side for the first time since the performance of the operation, and slept soundly for two hours. Respiration, during this time, was performed with apparent ease, through the aperture in the trachea. Throughout the day she took a little beef tea and bread. The pulse was about 96, and she had three evacuations from the bowels without medicine. She passed a tolerable night; breathing pretty freely, except when the aperture in the trachea became obstructed with mucus, which the nurse had particular directions to remove. She suffered considerable uneasiness, how-

ever, from a slight dysenteric affection which occurred in the night, and for which a draught, containing half an ounce of castor oil and twenty drops of laudanum, was administered on the morning of the 11th. The affection of the bowels was probably owing to the calomel which had been taken in a single bolus, as there was a strong mercurial foetor from the breath ; and she complained of slight uneasiness of the mouth.

About 11 o'clock at night she complained of weakness, and there was evident sinking of the pulse. A small quantity of wine, therefore, diluted with an equal proportion of water, was directed to be taken occasionally ; and having fallen asleep soon after, it was observed, that she had drawn the blanket over her face, which evidently proved, that the obstruction to the passage of air, must have, in a great degree, subsided. She slept well throughout the night, but towards morning, in consequence of one of the tin retractors, by which the edges of the external wound were kept separate, having fallen out, the breathing became again a little impeded, and she expressed a desire that it might be replaced : this was accordingly done.

At 9 o'clock on the morning of the 12th, she was sitting up in bed, and breathing very freely through both apertures. Her countenance was



perfectly composed, and not at all expressive of anxiety. She thought she could breathe with more ease through the natural passage, and entertained strong hopes of recovery. Her voice continued still croaking, but she could articulate distinctly; pulse about 90, and of tolerable strength; dysenteric affection gone. She was allowed chicken broth, and a small quantity of wine, which she took with some degree of appetite. Her deglutition was scarcely, if at all, impeded.

Throughout this day and the following night she breathed with still more freedom, and could bend the head so far forward as to obstruct, in a considerable degree, the aperture in the trachea. The use of the retractors to keep the edges of the wound separate was now no longer necessary, as apparently but a scanty supply of air through the artificial opening was sufficient for respiration.

On the 13th the edges of the external wound had considerably contracted, and part of it appeared filled up by the deposition of coagulable lymph. There was still sufficient space for the free ingress and egress of air; but respiration seemed now to be principally performed through the larynx. The patient could lie in any position with the greatest ease, and when sleeping she could bear the bed-clothes to be drawn up about

her throat without inconvenience. The excretion of mucus through the artificial aperture, as well as through the mouth, had in a great degree subsided. From this period her amendment was progressive and decided, for on the 19th it was noted, that the passage of air, as well as mucus, through the artificial opening had entirely ceased ; and the external wound, which was rapidly contracting, was perfectly healed on the 23rd. She was, however, retained in the hospital until the 31st, in order that she might recruit her strength, on which day she was discharged well."

THOMAS CUMING, M. D.

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## CASE II.

THE following case, which occurred about the same time as the preceding, in which tracheotomy was also performed, though unsuccessful, affords some practical hints of considerable importance.

At 10 o'clock on the night of the 14th of May, I received a pressing message from Doctor Mills, to visit a woman in the Dublin Female Penitentiary who was in a state approaching suffocation from an inflammatory affection of her throat. I found her sitting erect in her bed,



breathing with the greatest difficulty—each inspiration attended with that loud, stridulous noise, which indicates an obstruction to the passage of air through the glottis. Her head was thrown back, and her chin brought forwards in a convulsive manner at each inspiration; her countenance was pallid, and indicated extreme distress; her skin below the natural temperature, and pulse small, and between 120 and 130.

I learned from the people about her, that she had been upwards of a month complaining of pain in her throat, attended with great difficulty both of deglutition and respiration, for which she had been repeatedly blistered and bled both locally and generally, and used other remedies under the direction of Doctor Mills, but that nothing afforded relief, or seemed to check the malady which appeared now to threaten immediate suffocation.

On examining the fauces, I could not perceive any swelling of the tonsils, or of the posterior part of the pharynx. The entire front of the neck was, however, so much swoln, that it was impossible to feel the trachea; and even the larynx itself was scarcely distinguishable by the touch. She could not swallow more than a teaspoon full of liquid at a time, and even that with

extreme difficulty. I had not the advantage of communing with Doctor Mills on the occasion, as, in consequence of my absence from town, I did not receive his message for some hours after he had sent it.

But it appearing evident to me, that she would die of suffocation during the night, if decisive means were not adopted to admit air into the lungs, no matter what the cause of obstruction might be, I determined upon immediately performing the operation of tracheotomy, to which the patient willingly consented, saying, she would submit to any thing to obtain relief.

On making an external incision through the integuments below the larynx, an inch and a half in length, such a flow of blood took place as might be expected from parts in a congested and inflamed state: and on continuing the incision through the fascia, I found all the parts lying on the trachea considerably swoln, and pouring out blood at each stroke of the knife. I waited near half an hour, applying sponges dipped in cold water to the part, before the hæmorrhage ceased, when I proceeded to lay bare the trachea, to which I was directed by the touch, as my sight was of little avail, from the difficulty of throwing the light of a candle into a deep and narrow wound. I, however, succeeded under those em-



barrassing circumstances, in making an opening into the trachea, when an immediate suffocating cough succeeded, caused by the blood finding access into that canal, and which, mixed with bubbles of air, was forcibly expelled through the wound. The bleeding now continued half an hour longer, but as it evidently came from small vessels, I had no apprehension on this account ; but the circumstance sufficiently shews the congested state of the parts in front of the trachea. When the bleeding ceased, which probably extended altogether to sixteen or twenty ounces, I left my patient considerably relieved, without attempting to enlarge the wound in the trachea, or even to introduce a canula, for fear of renewing the hæmorrhage.

In the morning I found her greatly amended ; totally free from convulsive cough, or stridulous breathing ; some air passing through the wound, but the greater part by the glottis ; for she was able to speak in a voice which, though low, was easily understood. The edges of the wound, like those of an inflamed part, retracted without any mechanical assistance. She continued during the day in a tranquil state, breathing partly by the wound and partly by the glottis ; but in the evening the wound had nearly closed, and little advantage was obtained by my endeavours to enlarge it by means of a probe. The laborious

respiration consequently returned, and she passed a most distressing night, gasping for breath.

On the morning of the 16th, I found her as ill as when I first saw her ; her pulse weak, and upwards of 130 ; no air came through the wound, which was extremely swoln. I made an attempt to enlarge the opening in the trachea, when a smart hæmorrhage occurred from an artery in the upper part of the wound, which was with some difficulty secured. Towards evening the swelling subsided, and I was enabled to introduce, without any further assistance from the knife, a canula into the trachea, through the opening that had been made on my first visit ; this excited a convulsive cough, but after a few minutes the parts becoming reconciled to its presence, it was without difficulty retained, and she evidently experienced the most decided relief. She was allowed beef tea and a little wine, but she could not swallow more than a tea-spoon full at a time, and even that with great difficulty.

May 17th, the canula in the trachea excited but little uneasiness, and she got some sleep during the night : the air made so loud a whistling noise through the canula, that it could be heard a considerable distance from her apartment. She was extremely weak, but her most alarming symptom was her total inability to swallow, even the smallest



drop of liquid, as it was instantly regurgitated into her nose. As she could not speak, she informed me by writing, that she was starving, and felt the most acute pain from hunger. I made an attempt to pass a gum elastic tube through the nose into the œsophagus, but it excited such irritation and convulsive efforts as soon as it reached the cause of obstruction in the upper part of the œsophagus, that I was obliged to relinquish the attempt; and the tube introduced through the mouth was equally unsuccessful. She was, therefore, as a last resource, ordered enemata of strong broths, and of milk and opium. In the evening the canula was taken out of the trachea, cleaned, and again returned; a considerable quantity of mucus passed instantly through it; but by no means with the same freedom, as it did in the opening made in the preceding case, in which a portion of one of the rings of the trachea was removed. Her pulse were indistinct and rapid, and she exhibited every symptom of approaching dissolution: she however survived until next morning, when I understood she vomited a quantity of purulent matter, and almost immediately expired.

The body was examined in the presence of Doctor Mills, Doctor Cuming, and other gentlemen. An abscess containing about six ounces of purulent matter was discovered, extending from

the second or third cervical vertebræ as low as the sixth or seventh, situated between the bodies of the vertebræ and the posterior boundary of the œsophagus; the walls of the abscess were firm and unyielding.—The matter which she vomited just previous to death, as well as some which was found in the trachea, must have escaped through a small opening in the most prominent part of the abscess, opposite the upper portion of the larynx, as there was no other source ascertained from which it could have been derived. This opening was, however, rendered indistinct during the examination by the incision into the abscess running exactly through it; but the thinness of the coats of the abscess at this point, and some appearance of ulceration, rendered this fact sufficiently obvious.

The vertebræ, larynx, pharynx, and œsophagus, were of a natural appearance, as were also the lungs, except that there were extensive old adhesions between the pleuræ costalis and pulmonalis on both sides of the chest. It was ascertained that the thyroid gland, which was much swelled, and descended lower than usual in an adult, was wounded during the operation, and that the hæmorrhage arose in a great measure from this cause; but, as was before observed, there was extreme difficulty in performing the operation, particularly by candle-light, in consequence of the



swoln state of the neck, and the very short distance which existed in this woman between the larynx and sternum ; under such circumstances it was better to risque wounding the thyroid gland, than the vena or arteria innominata by extending the incision to the sternum.—There was scarcely any additional redness excited by the canula in the trachea. The stomach had much the appearance of the colon when empty ; it contained about a spoonful of a dark-coloured fluid ; its inner surface was corrugated, and it was observed that its mucous coat was easily detached from the villous by the finger, and in some parts it had a florid appearance ; these latter appearances were probably the effects of the gastric juice on the stomach itself.

The practical lesson we derive from this case is of the highest importance, for if I could have been aware of the existence of the abscess, a simple puncture into it would, in all probability, have saved the patient's life. About two years since, a case somewhat similar occurred at the Richmond Hospital ; a young man was admitted, greatly reduced by previous disease ; it was supposed that he laboured under secondary venereal symptoms, for which he had used mercury extensively ; he complained of great difficulty in swallowing, attended with stiffness and immobility of the neck ; the slightest attempt to rotate

the head or raise the chin, was attended with acute pain. On examining the fauces there was nothing unusual; the obstruction was lower than this situation, and opposite the larynx; but every attempt to pass a sound was attended with such extreme pain and convulsive efforts, that all exertions in this way to remove the obstruction were found unavailing. The obstruction gradually increased to such a degree, that the patient could not swallow even a drop of liquid. His respiration also became impeded and croupy, and in this state he expired, but sooner than was anticipated, and rather unexpectedly.

On examination it was ascertained, that an abscess situated on three or four of the cervical vertebræ opposite the larynx, which were found carious, was the cause of the obstruction to the passage both of food and air, and that a simple puncture might have afforded relief from those urgent symptoms, which were the immediate cause of his death.

It is true that abscesses are every day met with on the back of the pharynx, obvious to the sight and touch; for these the remedy is apparent, and affords immediate relief.—But my object is to draw the attention of the profession to those abscesses, which, as occurred in the cases just detailed, are situated so low as not to be visible, and are, in many instances, beyond the reach of



the finger. Such cases may be indicated by the precise seat of the pain; the obstruction in the first instance to the passage of aliment; afterwards, as the swelling increases, to the passage of air; the slower progress of the symptoms compared to those of laryngitis; and the more rapid, when compared to those of stricture of the œsophagus, or of chronic tumours pressing upon that canal;\* the obstruction to the passage of an instrument down the œsophagus, while those complaints about the fauces, which might occasion obstruction, are absent; a general swelling of the anterior part of the neck almost approaching œdema, analogous to what occurs on the surface over any deep seated abscess; and possibly the accession of irregular shiverings, although it was not remarked that this symptom occurred in either of the cases detailed.

The existence of these, or one or more of these symptoms, should induce an examination with the finger; or if the finger cannot reach the obstruction, a gum elastic bougie or sound should be passed, and the obstruction will point out the situation of the abscess. If we are satisfied on this head, a curved trocar, somewhat similar to

\* These tumours are by no means unfrequent, numerous instances of which may be found in the writings of the older medical authors—Lieutaud alone details four cases of firm tumours impeding deglutition by pressing on the œsophagus. *Vide* Lib iv. Obs. 93, 95, 98, and 99.

that recommended by Sir E. Home for puncturing the bladder through the rectum may then be passed, the distance at which the sound met the obstruction being previously marked upon it; and here the stilet being made to protrude, may be boldly plunged into the tumour, taking care to push it towards the central line of the bodies of the vertebræ, where no danger can arise from the puncture. If matter flows, we will save the life of the patient, but if we are disappointed, no material injury, that I can conceive, will be the consequence of the attempt.\*

It is needless to state the necessity of avoiding in the proposed operation the entrance of the glottis; the irritation and convulsive cough excited by a foreign body in the larynx will probably be a sufficient security against such a mistake. It will, however, be effectually prevented by passing the fore-finger of the left hand so deep into the pharynx as to press down the epiglottis, which at the same time will answer as a director for the introduction of the trocar. In this way I have

\* It is true that Van Swieten, while recommending abscesses of the pharynx &c. to be opened, at the same time distinctly advises us not to meddle with those which are situated so low in the œsophagus as not to be visible; and adduces, in support of his opinion, a case which terminated favourably by the bursting of the abscess. It was situated opposite the upper margin of the sternum, and the discharge was so great as nearly



more than once been enabled to pass a tube into the stomach in persons who were in an insensible apoplectic state after swallowing narcotic poisons, and in whom this precaution was found necessary to prevent the tube from entering the glottis. If still there is any doubt on this point, let the stilet be withdrawn before the puncture is made, and a lighted candle held to the mouth of the canula will, by its flame, indicate whether or not it has passed into the larynx. If the abscess should happen to be situated between the œsophagus and trachea, the same mode of operating might be equally safe and successful.\*

But if the practitioner is timorous about passing a trocar down the œsophagus, a silver catheter forced into the abscess may answer equally well, and in most hands may be found the safer instrument.

to suffocate the patient.—*Comment in Aph. Boerh. Tom 2. Sect. 814.*

The two cases, however, detailed in this paper, afford sufficient evidence that a strict adherence to his admonitions would sometimes prove a fatal error.

\* Morgani relates the case of an old woman, in whom an abscess was situated between the trachea and œsophagus immediately below the cricoid cartilage.—After bearing the pain of impeded respiration and deglutition for several days, the abscess at length burst; but she was so exhausted by her sufferings, that she did not long survive this favourable event. *Tom 2. Litt. 15. Art 15.*—A timely puncture in the manner detailed, would in all probability have saved this woman's life.

An instance of the utility of the catheter in such cases is to be found in Hildanus, who relates that a clergyman consulted him on account of difficult deglutition, but whose respiration was unaffected. On passing a catheter down the œsophagus, a resistance was met with opposite to the upper edge of the sternum, and some force being used, there followed, on withdrawing the instrument, a thick, viscid, curdy fluid, similar to that which is found in strumous glands.—The patient was a little relieved so as to be able to swallow some wine, but soon after died of weakness and exhaustion.\*

Even in large abscesses situated on the posterior part of the pharynx, which are visible, it may be more prudent to puncture them with a trocar than with a lancet—I recollect having punctured a large abscess on this part with a lancet, which was followed by such a sudden gush of matter, some of which entered the larynx, as excited apprehensions that suffocation would follow.

These observations I trust will not be esteemed unimportant respecting a most dangerous affection which may be far more common than we would be at first inclined to imagine, but which I have little doubt is frequently confounded with those

\* Observat. Chirurg. Cent. iii. Observ. xxxiv.



other affections of the throat, which are of more general occurrence.

The first case detailed in this paper, in which tracheotomy was successfully performed, affords a strong illustration of the advantages of having recourse to the operation in the early stages of croup or laryngitis, before the trachea or larynx becomes coated with coagulable lymph, or effusion has taken place into the lungs; principles already sufficiently insisted upon in the writings of Doctor Farre, and Messrs. Laurence and Chevalier.

The two instances afterwards detailed of impending suffocation, have led me to considerations which, I trust, will be found useful, not only in ascertaining the disease in question, but in applying the appropriate remedy.

MAY 31st, 1820.

# REPORT

OF THE

## South Fever Asylum, Cork,

FROM ITS OPENING, DECEMBER 5th, 1817,

TO ITS CLOSE, MARCH 25th, 1819.

BY WILLIAM PICKELS, M. B.

ONE OF THE PHYSICIANS ; ALSO, ONE OF THE PHYSICIANS TO THE DISPENSARY.

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*Read by Dr. O'Brien, 7th August, 1820.*

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PREVIOUSLY to the opening of the South Fever Asylum, the increase of the epidemic throughout this city, taken generally, had been such as to preclude almost wholly the south suburbs from the benefit of the then existing fever establishments, the House of Recovery, and Dispensary Fever Asylum ; these establishments, situated both in the north suburbs, giving a preference, as was excusable, (the urgency of cases being supposed the same,) to those applicants residing more immediately in their vicinity. As the effect of this



almost total exclusion, the average number of external fever cases on the dispensary books, for the south district, during several weeks prior to the opening of the hospital, was upwards of sixty. In these circumstances, as dispensary physician to the district, a charge which had devolved on me by the lamented deaths, occasioned by contagious fever, of my immediate seniors, Doctors Newsom and Lindsay, I felt it my duty to represent the necessity of establishing an additional fever asylum, which should be appropriated to the relief of the south district; a necessity which appeared to be the more imperative, as I had but just recovered from a severe fever myself, and was consequently less fitted, in addition to the ordinary business of the dispensary, to give frequent attendance at their own houses to so great a number of fever cases, distributed over a district which comprehended in extent, the entire of the south suburbs. A portion of the old barracks, situated in this part of the town, was accordingly fixed on for the purpose, which thus, from its new application, acquired the name of South Fever Asylum.

The form under which the epidemic appeared at the opening of the asylum was, with little alteration, the same which it had presented since the date of its commencement, in the latter part of the preceding winter; and the description

upon which I shall now more immediately enter, namely, that of the appearance of the fever at the opening of the house, on the 5th December 1817, and during some months after, will apply in consequence, with the allowance of the few corrections which will be pointed out, to the former state of the epidemic.

The disease was, in almost every instance, preceded by trembling and nausea, or, as the patient expressed it, by an empty straining. During the first days of actual disease, the symptoms which principally arrested the attention of the physician upon visiting the patient at his own house, preparatorily to removal to the hospital, were, head-ache, and pains in the back and limbs, particularly in the legs; stupor; oppression of the chest, and sighing; nausea; quick and feeble pulse; languor, and suffusion of the eyes; skin hot—thirst; a peculiar foetor from the skin, which often of itself, and previously to examination, indicated the presence of fever upon entering the room; milk-white appearance of the tongue; costiveness of the bowels; sneezing, and, in a great number of instances, bleeding from the nose. The most distressing source of uneasiness was evidently the head-ache; the patient, when questioned, complaining, in almost every instance, of the head-ache in particular, and often using some comparison illustrative of its



acuteness. It was commonly referred to the forehead, more particularly over the eyes; rarely to the occiput. In a few instances it was dull, and vertiginous.

Stupor was a symptom exclusively characteristic of the period of the epidemic, which is under consideration; it consisted in a certain drowsiness, or tendency to sleep, with little actual sleep. Even in cases unattended by delirium, under the influence of stupor, the patient, upon recovery, seemed to have lost all recollection of what length of time he had been sick, whether days or weeks.

Delirium usually set in about the sixth or seventh day. It was of that mild character described by Sydenham, in which, "the patient is rather calmly than furiously delirious, talking wildly, between whiles!" Its presence, or approach, was often indicated by a prominent, and somewhat inflamed appearance of the eye. It was sometimes accompanied with efforts to get out of bed; but delirium so furious as to require the use of the strait waistcoat, was rare. In one or two cases, furious delirium appeared, as the first symptom of the disease.

During delirium, the patient commonly raved of those objects which had principally engrossed

his attention during health. A cow-herd, who had been brought in from the country, fancying that the patients who lay around him were those animals which he had been accustomed to attend, endeavoured at intervals to rouse them into motion by a particular cry, which is usual for this purpose, in the country. A thief raved of his thefts, and accomplices; and in this way some useful information was obtained. A faithful steward refused, with many acknowledgments, to take his wine, as he had his master's keys, and it might render him unfit to perform his business.

Next to the affection of the head, the most prominent and constant feature was, the affection of the chest, or of the organs of respiration, as marked during the first days, by oppression of the præcordia, sighing, and in addition, in the progress of the disease, by cough. The patient rarely complained of pain in the chest or side, even upon inspiration. The cough was generally accompanied by a copious and viscid expectoration, which was, in a few instances, tinged with blood. During summer and autumn, cough had rarely supervened until the fever had been of some days continuance; but, during winter, cough and other catarrhal symptoms often appeared from the first; a mode of access which was found extremely suspicious, as it not unfrequently disguised a malignant form of the fever. During



winter, as an effect of the irritation of coughing, sore throat was universally prevalent. Nausea, accompanied in several by vomiting, was frequent, not only during the first days, but during the whole course, and even during convalescence. Soreness, or pain on pressure of the epigastrium, over the region of the liver, a symptom which, in the course of the epidemic, became extremely prevalent, was rare. The derangement of the urinary organs was indicated by the frequent occurrence of dysuria, or retention of urine, which came on often as early as the third or fourth day, and continued troublesome during the career of the fever, and even during convalescence. In only two or three instances, however, was it found necessary to pass the catheter. In the disease, as it appeared among the better ranks, suppression of urine occurred, as I have been informed, in several fatal cases. In cases more particularly which terminated unfavourably, the derangement of the urinary organs was often attended by swelling of the abdomen.

Petechiæ, in a great majority of instances, appeared on the fourth or fifth day, rarely later than the tenth: they were principally observable upon the breast, neck, shoulders, arms, and thighs, rarely upon the face. From their resemblance, in some instances, to freckles, the friends of the patients, in their descriptions at the dispen-

sary, sometimes compared the appearance of the skin covered with them, to that of a turkey egg. The mottled or marbled efflorescence, resembling measles, occurred in several. Petechiæ were accompanied with, or preceded by, a papillary, or miliary eruption, which appeared indiscriminately on the face, and on all parts of the body, but which scaled off, after a day or two, in a dust-like powder. This eruption frequently, however, occurred by itself, independently of petechiæ, and, in several instances, immediately succeeded the use of warm cordials, particularly of punch. Petechiæ readily yielded to the usual ablutions, and disappeared in four or five days: in a few, however, they continued during ten days, or upwards. In severe or fatal cases, they were often of considerable size, livid or black, and exactly circular.

Aphthæ occurred in several young subjects, but in only one instance, which proved fatal, terminated in gangrene. Among the better ranks, however, gangrenous throats from aphthæ occurred, as I have been informed, in some fatal cases of adults. Erysipelas of the face supervened in a few, during the summer, about the seventh day.

Bleeding from the nose, though often occurring separately, in a majority of instances, ap-



peared in petechial cases. The discharge did not usually exceed a few drops, but continued to recur during some days. In two cases, however, which proved fatal, the discharge was so profuse, as to fill vessels of considerable size. Bleeding from the nose came on, in a majority, on the second day, rarely appearing later than the seventh ; it was much more common among males, than females. Its frequency, as well as that of petechiæ, was sensibly diminished by the setting in of cold weather in January.

The debility which accompanied the fever was such, that the patient was unable from the commencement to rise from the bed, or to walk without assistance, and, in some instances, even without the effort of rising, fainted in bed. In a few, syncope appeared as the first symptom of the onset of the disease. The pulse, though commonly quick and feeble, was often regular. In few instances the pulse was found regular, and the feet were warm, an hour or two before death. In those instances in which the pulse was quick, it sometimes retained its quickness during convalescence. Among the most constant symptoms may be ranked, the foulness of the tongue, the tongue having been very rarely clean, or of the natural appearance. In the advanced stage, the milk-white appearance of the tongue passed into brown, and in severe or fatal cases, into

black ; the bowels, though commonly costive, were often regular, and in every instance readily yielded to the use of purgatives. A striking peculiarity of the present period of the epidemic, was the discharge, during the course of the fever, of worms by the intestines, but often by vomiting. The discharge usually gave relief: it was not confined to children, but occurred in several cases among adults: in some cases, in which I had an opportunity of seeing the worms, lumbrici had been voided, of considerable size. In the instance of a child, who died, a dispensary patient, a worm, as her mother informed me, had been discharged from the nostril.

The tendency to putridity was evinced by the rapid putrefaction of bodies after death, rendering necessary, more particularly during the preceding summer, their almost immediate interment; many instances even occurred in which the skin of the arms, thighs, and of almost the entire body, changed to a deep livid or black colour, somewhat of the appearance as if scorched by gunpowder, several hours before death. Gangrene of the hips, nates, and shoulders, was frequent in the course of the disease. Of gangrene of the toe, only one instance came within my observation during the epidemic; this occurred during the preceding summer; vibices occurred also during the same period, in a few fatal cases.



The disease, when fatal, rarely exceeded the 11th or 13th day; in a majority, death took place on the 11th, but it often happened earlier; in one instance, death took place on the third; among the most usual symptoms in the last stage of fatal cases, were low muttering, comatose, delirium, hiccup, subsultus tendinum, picking the bed-clothes, convulsions of the muscles of the face—general convulsions were rare. In three instances, in which hæmoptysis, or a discharge of blood by the mouth, took place, death followed. The disease, when favourable, was of longer duration in adults than in young subjects, and in females than in males. Of 59 patients under the age of 16, taken in succession, who recovered, 37 did not exceed the 10th day, 22 did. Of 60 patients, over the age of 16, taken in the same order, and who recovered, 9 did not exceed the 10th, 51 did. In general, the fever declined gradually.

In those instances in which a critical effort was perceptible, the evacuation, which appeared to prove most frequently critical, was that by the pores of the skin, relief of head-ache, and of other severe symptoms, often immediately following a general perspiration; crisis in this way commonly took place in adults on the 14th, 15th, or 20th day; it was often preceded, or followed, by sound sleep: in one instance sleep was protracted at the time of crisis, with occasional

interruptions, for the purpose of taking drink, during three days, and three nights; in several instances a perspiration, which appeared to have proved critical, was accompanied with diarrhœa. In two instances, of persons who were remarkable for their intemperate habits, after an apparently favourable crisis, the symptoms returned with redoubled violence, and proved fatal.

Of all those symptoms which indicated a favourable termination, by far the most unerring, was deafness. Of several hundred cases, in which this symptom occurred, only two proved fatal; hiccup, though among the worst symptoms, occurring in the last stage, occurring *in the course*, was favourable; bleeding from the nose, though rarely critical, was in general salutary; sneezing has been always regarded by the vulgar as a favourable omen: as my attention was not particularly directed to it, in this point of view I cannot, from my own experience, confirm the observation. Avicenna, as quoted by Hoffman, states, that sneezing on the eve of a critical day is salutary. A more unequivocally favourable symptom was, an eruption of the pustules about the mouth and ears, which took place in many instances. The removal of the fever was, in general, followed by a state of considerable debility, from which the convalescent slowly emerged. Relapses were frequent. The relapse



was, however, milder and less fatal than the original disease. Independently of the protracted state of debility which remained after the removal of the fever, the most formidable sequelæ were hæmoptysis, and diarrhœa, which respectively proved fatal to many of the poor in their own houses. Idiotism continued in a few during several days after the cessation of the fever. Other sequelæ were, dropsical swellings of the feet, a symptom which sometimes occurred during the course; cutaneous affections, dimness of sight; occasional pain, and dizziness of the head, particularly after meals. In one instance, a noise in the head, or ringing in the ears, upon laying the head on the pillow at night, continues still troublesome, after an interval of upwards of two years. In three instances, during the spring, the disease passed into tertian intermittents.

During a considerable portion of the period which is under consideration, in addition to the epidemic fever, *small-pox* was also epidemic in this city. As there was an almost total exemption from small-pox during some years before, as I have been informed upon good authority, its prevalence at this time appears to have been connected with the extension of fever. It prevailed more particularly during the autumn, but cases of it were numerous during the winter and spring

of 1817—18. Though principally confined to children, several cases occurred among adults. In some of those cases which I saw, the apices of the pustules were black. It prevailed more particularly in the south suburbs, in some lanes, scarcely a single house having been exempt.

Counterbalancing the comparative mildness with which young subjects were affected with fever, small-pox proved fatal to a number of children; and in some instances, in which it did not prove fatal, eroded and destroyed the organs of vision. It was not confined to the city, but was epidemic at this time in Douglas, the Ovens, Bandon, Donoughmore, Blarney, and White-church. With the exception of small-pox, other diseases were rare, or were absorbed in the prevailing fever.

The outline of the curative plan which I principally adopted in the treatment of the fever, during this period, was briefly as follows:—A purgative was given every second or third day, in all cases in which the bowels were not too free, during the whole course of the fever. Wine was given in cases of extreme debility: it was rarely, however, carried beyond the extent of a bottle during the twenty-four hours, given in divided portions, at uniform intervals. In the few instances in which it had been pushed beyond this limit, its bad effects were evident. In general, punch, from a conside-



ration of economy, was substituted for wine, but in extreme cases, more particularly in old subjects, no cordial was found so decidedly efficacious as wine. In advanced fever, attended with great oppression of breathing, a blister between the shoulders afforded in several instances signal relief. Delirium was treated with cold applications to the head, and warm fomentations to the feet. If these means were not found availing, a blister was applied to the nucha; in cases of coma, blisters, in addition, were applied to the calves of the legs, and sinapisms to the soles of the feet. Bleeding from the arm was scarcely resorted to in any instance. In one instance, in which pneumonia was complicated with the fever, and in which the subject was remarkably plethoric, I bled, though in an advanced stage of the fever, to the extent of 16 ounces, and notwithstanding the almost immediate appearance of petechiæ, as a consequence, the patient was convalescent in a few days. The local application of leeches to the head in the few instances in which, from its expensiveness, it was resorted to, was found highly beneficial. Emetics were rarely employed, the patient, in almost every instance, having been brought into the hospital under the symptoms of fever fully formed. In some cases, in which emetics had been given by the friends of the patients, even in the commencement, they had been followed by spitting of blood. In two or three cases of furious delirium among

adults, the cold affusion was employed with considerable benefit. In cases of adults unconnected with this symptom it was found prejudicial: in young subjects, however, it appeared to have operated favourably in many instances, by cutting short the disease: in other instances it was rarely attempted.

In cases attended with great heat and dryness of the skin, in which cold affusion was not resorted to, the body was sponged with vinegar and water; as an expectorant, the carbonate of ammonia was added to a pectoral mixture. Dysuria, or retention of urine, yielded to laxatives, stuping the abdomen, and mucilaginous diluants, as flax-seed tea. With the intention of procuring sleep, five or six grains of extract of hyosciamus, or a draught containing from 25 to 30 drops of tincture of opium, was commonly given at night; both, however, frequently failed. In two or three cases the hyosciamus produced purging and vomiting. When other means had failed to produce sleep, a few drops of dilute sulphuric ether, given in a glass of water, sometimes succeeded. In the choice of drink there was considerable capriciousness, but the drink which was most commonly preferred was either that which was acid, particularly cider, or cold water. Ripe fruit was freely given during the disease. The decoction of bark, with dilute sulphuric acid, was given during convalescence.



Towards the end of spring, fever had finally disappeared among the better ranks, and had become, in many respects, milder in its character among the poor. The stupor, which had been hitherto one of its principal characteristics, was no longer observable. The cough and affection of the chest, were considerably alleviated, and the affection of the throat had altogether ceased. The sickness of the stomach was principally confined to women. The duration of the disorder was considerably abridged, often not exceeding a few days. A remarkable change had at this time taken place in the state of the bowels; the bowels, which had been hitherto, with few exceptions, either costive or regular, having been now, in a majority, affected with diarrhœa. The tongue was sometimes brown and parched, from the commencement, even in the slightest cases. Petechiæ, and bleeding from the nose, were rare. Though the original disease had thus become, in many respects, milder, cases of relapse, it was found, had increased, as well in the number of those affected, as in severity of symptoms. As this increase was attributed, in a great measure, to the circumstance of convalescents not having been detained longer than a week in the convalescent wards, in consequence of the great number of applicants which pressed for admission, an additional portion of the barracks was at this time fitted up, by an order of the conducting com-

mittee, with the view of obviating, by enlarging the general accommodations of the house, this supposed cause of the increased frequency of relapse : the disease continued in this form to prevail during almost the entire summer.

During the latter part of summer, and during autumn, which were of unusual warmth and drought, the epidemic exhibited a marked and aggravated change of character ; the most prominent symptom, at least in the first stage, was soreness or pain on pressure of the epigastrium over the region of the liver ; the patient, when questioned, referring, in almost every instance, to this as the most urgent symptom ; the pain was sometimes so severe, that the patient could not bear the slightest application to the part. Universal yellowness of the skin and eyes, a phenomenon which had been hitherto observable only in the last stage of some of the worst cases, occurred now in an average of nearly every fourth case, appearing in early as well as in late stages. Bile, resembling in its appearance the yolk of an egg, and bitter to the taste, was frequently discharged by vomiting ; in other instances, a liquid of the most intense green was profusely discharged by vomiting or by stools ; the common appearance of the tongue was yellow—it was often loaded ; in a few it was green ; it was sometimes of an unnatural red. In many, it



was variegated with streaks of different colours, the outer streaks being white or yellow, and the middle yellow, or red, or brown. Rheumatic pains and swellings were extremely prevalent, amounting in many instances, to paralysis; particularly of the right arm, the patient being unable to lift it. The parts commonly affected with swellings were, the hands, feet, and knees. As in the preceding periods of the epidemic, head-ache, particularly in the forehead, was frequent. Delirium was even more frequent than at any other period; among boys there was scarcely an instance of exemption. The affection of the chest still continued, though in a moderate degree. The cough was accompanied with little expectoration. Sighing was no longer a characteristic. The pulse was commonly quick, but sufficiently regular as to strength. The heat of the skin was considerably elevated. The bowels were often costive. During a considerable part of autumn, dysentery having become epidemic in this city, the fever was, in several instances, accompanied during this period with gripings, tenesmus, and bloody, or slimy and bloody stools. Aphthæ were rare. Petechiæ and bleeding from the nose, which had, since the setting in of cold weather in January, been rare, prevailed now to an extent unparalleled during the epidemic. Bleeding from the nose was particularly observable among boys, but petechiæ were alike frequent among persons

of all ages and of different sexes, from children at the breast to men and women of eighty ; they were in many observable upon the face, particularly on the eyelids. The common appearance was that of red or purple round dots, of about the size of a pin's head, placed at some distance from each other, and studding, as it were, the skin ; but they were often so thick set, as that the whole body appeared painted from head to foot. Several cases occurred of petechiæ without fever ; the papillary eruption was rare. Both petechiæ and bleeding from the nose were later in their appearance in the course of the fever than heretofore, and were particularly observable in the relapse.

The debility was not in general such as to preclude the patient from rising from the bed without assistance : but a short continuance in the erect posture, or (if during the commencement of convalescence) the slightest freedom in the exercise of walking did not fail to produce an aggravation of symptoms, or a relapse.

Cases presenting anomalous or conflicting symptoms, occasionally presented themselves during every period of the epidemic, but with a degree of frequency during the present. Thus in cases the mildest and most favourable in other respects, and which accordingly terminated in



the most favourable manner, some one symptom occurred which was usually characteristic of the last stage of severe cases. Thus in some of the lightest cases in the hospital, there were involuntary stools; in others, the tongue was black from the commencement: in others, there were large and livid petechiæ. In an opposite description of cases, under a combination of severe symptoms, the appetite was unimpaired, and in three instances a desire was expressed for food (pork or beef) a few moments before death. Gangrene of the hips, shoulders, and nates, was rare, but a remarkable symptom, peculiar to the present period of the epidemic was, in several instances, a blackness, or livid discoloration of the nose: in every instance in which this symptom occurred, it proved fatal. In two cases of children, which proved fatal, perforation of the cheek occurred to a considerable extent, by a slough.

In its access, the fever, during this period, came on, in almost every instance, in the evening or during the night, with trembling and nausea. When favourable, it terminated, with a pretty obvious preference, on the fifth, seventh, or ninth day—more particularly on the seventh.

Crisis by a fit of intermittent was extremely frequent; the fit coming on at night, and con-

tinuing on an average from half an hour to two hours. During the cold stage, the trembling was often so violent as to shake the bed. The perspiration which succeeded the hot stage was often so profuse, that it was necessary to change the patient's linen several times during the night. The fit sometimes returned on a succeeding night. Syncope occurred in two or three patients during the cold stage: delirium was frequent during the hot.

The suddenness of the transition from extreme danger to almost perfect health, was strikingly observable in some instances, more particularly in cases with jaundiced skin; it having sometimes happened, that in the interval between one visit and another, the jaundiced colours of the skin, with other untoward symptoms, had, in consequence of crisis by a fit of intermittent during the night, completely disappeared; so that the patient who the day before seemed at the point of death, was now almost free from sickness. It seemed that the brighter the yellow colour of the skin in jaundiced cases, the more favourable in general was the prognosis. Sneezing was observable in few: deafness was alike rare; though stupor was no longer a characteristic of the disease in its commencement or course. Coma was frequent in the last stage of severe or fatal cases. When fatal, the disease commonly extended to



three weeks or upwards. Tremor of the hand, upon examining the pulse, was more frequent than subsultus. Dysuria, accompanied in cases which terminated unfavourably, by swelling of the abdomen, was not unfrequent. Hiccup was rare in any stage. Hæmoptysis occurred in several, without having in any instance been followed by untoward consequences. In one instance, bleeding from the nose and hæmoptysis occurred during two hours of the night, succeeded by a perspiration, which proved critical. In two instances, without any preceding manifest aggravation of symptoms, the patients suddenly expired: one had been sitting up in the bed, conversing with the nurses, at the time of visit. Upon examining the pulse, however, I was alarmed to find, that it was only to be felt when the patient had placed himself in the horizontal position: he died within half an hour after; the other died shortly after taking his breakfast.

Dysentery, in every instance in which it supervened, aggravated and protracted the fever in its course, or proved formidable as a sequela. Paralysis, or torpor of the right arm, continued in several during a considerable length of time after the removal of the fever. In one instance convalescence was retarded by the formation of large tumours, or boils, upon the breast, back, and shoulders. In another instance a bubo ap-

peared under the axilla during convalescence. Of tumours of the parotid, only four cases came within my observation during the epidemic; in all these the patients were females: in the only case which proved fatal, and which occurred during this period, the tumours never became soft, but increased to a considerable size, so as greatly to disfigure the neck and part of the face: the tumour had not been opened.

Relapses, notwithstanding the precaution of detaining the convalescents a longer time in the convalescent wards, had become even more numerous during this period than during any other of the epidemic, nearly a fourth of the patients, as well as I can conjecture, having relapsed. Among the worst cases of this description it was observed, where persons who had been detained a considerable length of time in the convalescent wards, with the view of acquiring strength, the slightest exertion of body, or disturbance of mind, was often sufficient to produce a relapse. Instances occurred of persons having relapsed a sixth and seventh time.

Independently of the extreme proneness to relapse, must not be omitted, a remarkable liability of the epidemic to recur after distant intervals, as after intervals of several months. In some instances of this description, the disease recurred



in an aggravated form.—The dysentery, which during a considerable portion of autumn, was prevalent in this city, though formidable when combined with the fever, was, when alone, mild in its character, having proved fatal in few instances ; it was, however, extremely protracted, and liable to return : the stomach was in general affected : it was frequent among children, as well as adults ; in some instances, it was attributed by the patients to the use of sprats, which became plentiful about the time of its first appearance.

During September, measles were epidemic among children, and proved often fatal. Upon the decline of measles, in October, chin-cough became prevalent among the same class, and proved fatal in several instances. Small-pox had been rare since spring.

In the treatment of the fever during this period, a blister was applied to the epigastrium, in order to relieve the soreness, or pain on pressure. In some cases, however, in which the pain was violent, bleeding was employed to the extent of eight or ten ounces, the operation having been repeated if the pain was not considerably relieved. The blood when drawn, rarely shewed symptoms of inflammation. In two or three instances, in which there was violent pain of the abdomen, threatening inflammation, bleeding was employed to a more

considerable extent. The purgative in most frequent use was the bolus of calomel and jalup ; in cases in which dysentery supervened, castor-oil was found beneficial.

The rheumatic pains appeared to be sometimes assuaged by diaphoretics. Wine was sparingly exhibited, even in the worst cases ; in apparently the most hopeless case which occurred, but which terminated favourably, that of a man who was remarkable for his intemperate use of raw spirits, and whose liver was deeply diseased, I gave none. The patients, in cases of considerable debility, often wished for porter, but it appeared to have disagreed with several ; as a common drink, there was a marked liking for cold water, particularly among females.

To the autumn, which, as it had been stated, was of unusual warmth and drought, succeeded a winter memorable for its mildness, in the total absence of frost or snow. During winter, and the remaining period which this report embraces, namely, to the close of the house, in March, headache upon coughing was extremely prevalent. Rheumatic pains and swellings still aggravated in many instances the distress of the patient, as well during the course, as during convalescence ; soreness or pain on pressure of the epigastrium, though sometimes complained of, had ceased to be general.



The duration of the disorder was now greatly protracted, often exceeding a month, and scarcely, in any instance, falling short of three weeks ;—relapses were fewer than at any former period. The common appearance of the tongue was white, or grey. The pulse was often natural. The bowels were remarkably costive, particularly at the time of convalescence, and with difficulty yielded to purgatives. The stomach was little affected, even in the access. Crises by trembling, which had been so frequent during the autumn, were rare. Petechiæ and bleeding from the nose occurred in several : one instance, that of an old man of seventy, a macula of nearly the size of the palm of the hand was observable on the neck at the time of admission, about the tenth day. In another instance, the skin from nearly half the legs downwards changed a day or two before death to a deep blue colour, terminated above by a regularly defined edge, so as to have acquired the resemblance of having been covered by short blue stockings : cases of this description were rare.

The only instance of pemphigus which came under my observation during the epidemic, occurred during this period : the eruption appeared about the 17th day of the fever, the bullæ, with few exceptions, not having exceeded the size of a pea ; the case was mild in other respects, and terminated favourably.

Though the number of applicants was now every day diminishing, owing to the sensible decrease of fever abroad, yet the mortality was, during the last month, greater in proportion to the numbers affected than during any former: this mortality was particularly observable in cases of relapse: in one case of this description, which proved fatal, ascites supervened upon the fever. Dysentery, after an interval of some months' disappearance, having again become epidemic during the latter part of winter, supervened in several instances, aggravating, as before, the fever in its course, or proving formidable as a sequela.

In an instance of mania which occurred as a sequela, a mother attempted to destroy her own child.

Bleeding, to the extent of eight or ten ounces, was frequently resorted to during this period, with relief of head-ache upon coughing. The purgative which was found most successful in overcoming costiveness, was the mixture of the infusion of senna and of Epsom salts. Wine was given to the extent of a bottle, in the twenty-four hours in cases of extreme debility. In the case, though ultimately fatal, of the old man of seventy, on whom was observable the large macula at the time of admission, an instance was, I think, afforded of its good effects: this man, though speech-



less when brought into the hospital, and apparently on the verge of dissolution, under the administration of a bottle of wine each day, recovered the use of his faculties, lived nearly a fortnight after the disappearance of the fever, and died then from the mere debility consequent upon severe fever in a superannuated subject. In a few cases, in which the fauces were nearly obstructed by a load of viscid phlegm, emetics of ipecac, in small doses, procured immediate relief. It may be requisite to state in this place, that during every period of the epidemic, the utmost attention was paid to cleanliness; every patient, upon admission, was washed, provided with clean linen, and subjected to the operation of cutting off the hair. A supply of linen was particularly necessary, as there was a total destitution in this particular. Immediately upon removal to the hospital, the apartment of the sick was whitewashed and fumigated; the straw upon which he had lain, if amidst overwhelming poverty he had retained even a wretched portion of straw upon which to lie, was burned, and fresh straw provided. Upon dismissal from the hospital, each convalescent who appeared to be a more than ordinarily pitiable object, was provided with an allowance of meal, and a ticket for soup; during the winter months, in addition, with a blanket, and a proportion of coal. The Asylum was supported during some time after its establishment by voluntary contribution, aided by a

small grant from government, but latterly by presentment, levied on the city; the amount having been advanced by government, under a promise of repayment within a certain number of years.

The close of the Asylum may be said to mark the epoch of the termination of the epidemic, the number of fever cases which subsequently occurred not having considerably exceeded the standard of ordinary times. The date of the commencement of the epidemic may, I think, be fixed towards the latter part of the winter of 1816—17. Struck at this time by the unusual increase of fever cases on the dispensary books, I ventured in a letter (which, under the signature of Medicus, appeared in one of the public prints) to point out, from a consideration of the actual circumstances of the city, the impending evil; conjuring the wealthy to avert it, as far as individual exertions were available, by contributing to the relief of the poor. The rapid advance of the fever during the summer, is marked (the accommodations of the House of Recovery having proved insufficient) by the establishment of the Dispensary Fever Asylum in June; and its still further progress, during the winter, by the additional establishment of the South Fever Asylum, in December. The period during which the epidemic was at its height, was the winter and part of the spring of



1817—18. The decline of the malady is indicated by the discontinuance of the Dispensary Fever Asylum in August 1818, and its termination, as has been just stated, by that of the South Fever Asylum in the end of March, 1819. Taking the points which have been fixed as those of its rise and termination, the epidemic thus continued, with varying degrees of violence, to rage in this city upwards of two years.

Of the contagious character of the epidemic, ample evidence presented itself in its common manner of propagation, by succession among individuals of the same family, or living in the same house. In the houses, however, of the better ranks, the fever rarely extended beyond a single individual of the family. That this comparatively limited propagation among the families of the better ranks was owing to the superior attention paid to cleanliness and ventilation, is forcibly attested by the circumstance, that in those lanes inhabited by poor which were most notorious for filth and want of ventilation, the extension of the fever was so rapid and universal, that the inhabitants were all, without exception, successively removed to the hospitals in the course of a few months.

During no period of the epidemic was the successive propagation of fever among the poor

more conspicuous (I had almost said, so conspicuous) as during that which was subsequent to the extinction of the disease among the better ranks. From the lanes in particular which intersect the Main Street, I could, during the period to which I advert, multiply instances which would swell this report far beyond the usual limits: I shall confine myself to the single instance of my having visited from July to October, 1818, in a single garret in Angel-lane, the first house on the right hand side from the Main Street, fourteen different individuals successively affected with fever.

Of those persons connected with the Asylum, and from the nature of their occupations exposed to frequent communication with the sick, all, with only one or two exceptions, were attacked—the apothecaries, (Messrs. Cussin and Orphen,) the hair-cutter, the porters, the nurses. Some nurses who had, previously to the commencement of the epidemic, served during years with impunity at the House of Recovery, were now attacked. The man employed in fumigating the apartments of the sick after removal to the Asylum, died of a severe fever. Among the last cases which proved fatal, was that of Miss Woods, daughter of the matron, a young woman who had resided only a few days in the house. Of the medical men connected with the dispensary,



seven physicians, and the apothecary and his apprentices, contracted severe fevers, of whom died two physicians, namely, Doctors Lindsay and Crofts,\* and the apothecary, Mr. Travers. The only physician of this city unconnected with the dispensary, who contracted fever, was Doctor Bullen.

Among those to whom the fever proved most fatal or hostile, were the old, and those who were debilitated by previous diseases, particularly asthma. Women were affected in a greater proportion than men. The balance of mortality, however, by taking the average of the three hospitals, was, I find, in favour of women: though in the particular instance of the south hospital, the deaths among the females exceeded those among the males. The disease it has been already stated, rarely proved fatal to children. In five or six fatal instances among the better ranks, the sufferers were remarkable for the practice of bathing throughout the year, winter as well as summer. Of six or seven blacks who were seized, all, with the exception of one, died. In some instances, in which the poison appeared to have been received into the system, but to have remained latent, very slight causes were sufficient to excite

\* Doctor Newsom died a few months previously to the commencement of the epidemic.

it into action. In one instance, which came under my observation, the exciting cause was a slight fit of laughter. Among many instances which may be adduced of the effects of terror, it will be sufficient to mention the following :—A man happening to meet in the streets an acquaintance whom he had not seen for some time, shaking hands with him, inquired where he had been ? upon being informed that his friend had been just dismissed from the fever hospital, the man went home, took immediately to his bed, and died on the ninth day of fever. During the epidemic a practice was extremely prevalent, and which has not yet altogether ceased, that of exposing dead bodies in coffins in the streets, in order to procure money for their interment. Of the tendency of this practice to propagate fever, I cannot forbear to mention the following instance :—In the Asylum were, at one time, a father and four daughters : of this family the first taken sick of fever was a daughter, who having had occasion to go to the milk-market for milk, was seized almost instantaneously with trembling, headache, and other symptoms of fever, in consequence of the smell exhaled from the putrid dead body of a woman lying exposed there in an open coffin with a plate on her breast, for the purpose of collecting money for her interment.

Of the total number affected during the epidemic,



it were not easy to form an exact estimate. The most comprehensive returns which we possess are those of the dispensary; the great mass of patients who were received into the three fever hospitals having been previously visited by the dispensary physicians for the purpose of ascertaining the disease, and a considerable proportion who could not be received into the hospitals from want of accommodations, having been treated throughout at their own houses solely by the dispensary physicians. Taking the dispensary returns as a guide, the number of fever patients which appear on the books of that establishment from the rise to the termination of the epidemic, (that is, from January 1st, 1817, to April 1st, 1819,) is, I find, 16,884. Now as relapses and cases in which the fever recurred after distant intervals, are not distinguished in the returns, this calculation would appear to be too much; balancing, however, the excess arising from these causes against a considerable source of deficiency arising from those persons not having been included who passed through the disease without having been placed on the dispensary books, the calculation may be, after all, pretty correct, or perhaps below the truth. The population of Cork was estimated previously to the commencement of the epidemic, at upwards of 80,000; consequently, at least a fifth of the entire population was affected with fever. Among the lunatics of the Lunatic Asylum

scarcely a case of fever occurred during the epidemic, as I have been informed by the eminent physician of that establishment. Among the prisoners of the city goal also, though situated in the midst of the city, few cases of fever occurred, owing to the extreme attention paid to cleanliness. A like exemption was enjoyed by the military in the barracks, situated at a short distance from town.

The total mortality from fever it were still more difficult to estimate with exactness, than the total of the numbers affected: there being no data, even in the instance of those placed on the dispensary books, to ascertain the number of those who died at their own houses, the friends seldom reporting the event when fatal. If a calculation founded on the number of applicants for parish coffins be not rejected as too vague, from a calculation of this sort, which I formed for one year of the epidemic, it would appear that, during this year, there died at their own houses from fever, its sequelæ, and other diseases, upwards of 3000 persons.

Among many instances which might be adduced as illustrative of the mortality of fever, in particular among the poor in their own houses, I was struck by the following:—Upon visiting from the dispensary, (a short time previously to



the opening of the South Fever Asylum,) a case of fever in the first house of Gallows-green Lane, I found that in this, a small house, had lately died, within a few months, six persons of fever, and one of the small-pox.

The following Table exhibits the numbers admitted into, discharged from, cured, and who died in the asylum, during each month, from its opening to its close :

|                 |   |   | Admitted. | Disch. cured. | Died. |
|-----------------|---|---|-----------|---------------|-------|
| 1817. DECEMBER, | - | - | 195       | 78            | 9     |
| 1818. JANUARY,  | - | - | 149       | 121           | 10    |
| — FEBRUARY,     | - | - | 137       | 138           | 7     |
| — MARCH,        | - | - | 165       | 171           | 5     |
| — APRIL,        | - | - | 204       | 257           | 12    |
| — MAY,          | - | - | 212       | 233           | 8     |
| — JUNE,         | - | - | 251       | 219           | 5     |
| — JULY,         | - | - | 282       | 270           | 6     |
| — AUGUST,       | - | - | 264       | 301           | 8     |
| — SEPTEMBER,    | - | - | 207       | 188           | 12    |
| — OCTOBER,      | - | - | 234       | 206           | 7     |
| — NOVEMBER,     | - | - | 215       | 271           | 11    |
| — DECEMBER,     | - | - | 204       | 199           | 9     |
| 1819. JANUARY,  | - | - | 167       | 134           | 8     |
| — FEBRUARY,     | - | - | 132       | 106           | 9     |
| TOTAL,          |   |   | 3018      | 2892          | 126   |

Deduct 9, who died immediately after admission, and without having been seen by the physician,

9

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Of the total number admitted, 1593 were females, of whom died 67 ; 1425 were males, of whom died 50. The proportion of deaths among the females was consequently 1 in 23 : the proportion among the males, 1 in  $28\frac{1}{2}$ . The average proportion of deaths of both sexes was about 1 in 25. Many, however, died of other diseases, which were combined with the fever ; and many were old and worn-out subjects, utterly unable to contend against disease. Patients were generally admitted about the fourth or fifth day ; not unfrequently, however, much later. Few died when admitted in an early stage ; few, on the other hand, recovered when admitted in a very advanced. No patient was admitted but upon the note of a dispensary physician, a precaution necessary, as many of the poor in the excess of their misery, would endeavour, under the pretext of being affected with fever, to obtain admission into the Asylum for the sake of a bare subsistence.

The South Fever Asylum, as it might have been supposed from its having been formerly a barrack, consisted of small wards, containing five beds in a room. The Dispensary Fever Asylum, on the other hand, consisted simply of two large undivided floors, situated one above the other. This difference of accommodation seemed to afford, as the treatment in other respects nearly corresponded, a fair opportunity of determining the re-



lative value of large and small wards in fever ; but, upon a comparison of the returns of the respective houses, it may be seen that the relative mortality was nearly the same.

The mortality from fever among the better ranks, there is but too just ground to conjecture was, in proportion to the numbers affected, much greater than among the poor :—who has not been struck, during a certain period of the epidemic, by those numerous and well-plumed hearses which every where presented themselves to observation, and which, in many instances, conveyed to an untimely grave, individuals whom this city will long mourn !

Of the total number admitted into the South Fever Asylum, from its opening to its close, (that is, during a period of nearly sixteen months,) when I state that, in addition to the charge of one of the heaviest of the Dispensary districts, 1812 patients were treated in my department of the hospital, during this period, namely, 1421 males, and 391 females, some allowance will, I trust, be made for the many imperfections of this report ; the pressure of duty incumbent upon the double relation of dispensary and fever hospital physician having been often such, as that, with the exception of severe cases, I could barely register the prescriptions.

From the great pressure of duty, as well as from the prejudices of the friends of those who died, very few cases were dissected: as the result however of the very few dissections which were made, it may be stated in general, that, in every instance, either the brain or liver was found prominently engaged.

The terror of the lower orders upon the breaking out of the epidemic manifested itself in acts of inattention or unkindness to the sick, which, in a land proverbial for hospitality and generous feeling, will appear scarcely credible. The first intimation which lodgers in the same house often received of a person lying sick of fever in the house, was the visit of the dispensary physician; those in attendance about the sick anxiously concealing his situation, lest, as happened in many instances, he should be turned into the street. Among those cases which proved fatal in the hospital was that of a man, both whose legs had been amputated, I know not from what cause, who was found in this state lying in the street delirious, and, in the last stage of fever, having been turned out of his lodgings. A young woman who resided in the country, sick of some chronic disease, journeying to town in a car to her friends, upon the approach of night, and of a storm of rain, sought to obtain a lodging at the different cabins in her way, but every door was



closed against her reception, and in this state she remained exposed, during an entire night, to the inclemency of the weather.

During the summer of the first year of the epidemic, I attended several persons in fever in the fields adjacent to the south suburbs of this city, who had been placed by the ditch side by their own relatives, and who, but for the humanity of the neighbours, would have wanted other shelter. As terror, operating upon ignorance, ever gives rise to superstition, a conviction became at this time prevalent among many of the lower order, that the awful and unprecedented calamity which had visited themselves and their families originated in divine vengeance, aroused by the late impious, as was conceived, ascent of Mr. Sadlier in his balloon; a spectacle which had never before been witnessed in this city.

It may be useful to mention the following local, or exciting causes :—

First exciting cause.—*Damp*. Cork, in the Irish language, signifies a marsh. The disadvantage of its natural situation in this respect is aggravated by the rain when it falls being allowed to stagnate in the greater part of the city, from want of sewers to carry it off. In the present instance it

was observable, that the rain fell generally during the night.

Second and third exciting causes.—*Filth, and deficient ventilation.* Some of the lanes which intersect the Main Street are so narrow, that the dispensary physician, in traversing them during rainy weather, cannot open his umbrella. Unfortunately the habits or prejudices of the lower orders concur too powerfully to generate fever, their floors and stair-cases not having been washed or scraped for years, and their windows being often so contrived as to admit the light, but to exclude the air. Many, however, of the poorer orders, owing to the operation of the window tax, are deprived even of the benefit of light, and in these instances, the apartments are so dark, that the dispensary physician, in order to view the patient, is compelled to avail himself of the assistance of a candle, even in the noon day.

Predisposing cause.—*Famine.* Even the potatoe, which had so often heretofore saved Ireland from famine, had now failed ! Upon visiting one member of a family, the usual account of the rest of the family, (and their appearance but too well verified the account,) was, that in consequence of want of employment, they had been during a certain length of time, which they mentioned, often whole days



without having tasted food, or without aught having entered their lips, save, in their own rude, but affecting phrase, "the black water." If the bare recital of this melancholy fact cannot fail to afflict the feelings of the reader, heart-rending, it will be admitted, was the spectacle to him, whose duty led him every day to visit, without the ability to relieve, infancy and age denied the little sustenance which they want, and strength and beauty withered beneath the cruel operation of famine.

A

# CASE OF GANGRENE,

OCCASIONED BY THE

## Use of Mercury.

BY RICHARD GRATTAN, M. D.

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*Read September 6th, 1820.*

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It is the peculiar misfortune of our profession, that the physician, however great his information or extensive his experience, cannot pronounce with certainty as to the effects of medicines. The functions of the animal economy are so easily disturbed, and diseased actions are produced by so many various causes, either acting from without, or originating in the system itself, that it is always difficult to distinguish between those different actions, and often impossible to trace them to their original sources. Could we uniformly succeed in doing so, the practice of medicine would then rest on a sure foundation, and no longer continue what it now is—conjectural and uncertain.



Great improvements, it is true, have been made. The study of physiology has corrected many errors, and by suggesting more accurate and extensive views of the different functions, has rendered our practice more judicious and consistent than heretofore. Still, however, it must be acknowledged that we have at best but a faint glimpse of the truth, and that the instances in which we can decide with certainty are far inferior in number to those of which we are in a great measure ignorant. Hence it is that, in the treatment of disease, we are so often obliged to feel our way with caution, judging of the propriety of our practice more by the result, than from any previous conviction of our own. We succeed, and we felicitate ourselves—sometimes without reason, for it sometimes happens that nature alone was sufficient to effect the cure. We fail, and we blame ourselves—often unjustly, for the fault was not ours, but owing rather to a want of sufficient energy in the vital principle to second our efforts. Sometimes, on the contrary, we expose ourselves to well-merited censure, either for omitting to use the proper remedies, or for employing them without sufficient discrimination.

The following case, which lately occurred under my care, was one in which I shall perhaps be considered to have rendered myself liable to the latter charge. Be this as it may, as the issue was

unfavourable, and as the occurrence was the first of the kind which I ever witnessed, I feel it my duty to communicate it to the Association.

A girl ten years of age was admitted into the fever hospital. She had complained for some weeks previously, without exhibiting any evident marks of fever ; she became weak and languid, her appetite had declined, and her flesh had fallen away. Her parents first applied to a dispensary, but finding that she obtained no relief from such medicines as were there prescribed, and more marked symptoms of fever having presented themselves, they were induced to request to have her removed to the hospital.

The child when visited obviously laboured under febrile excitement, and appeared to be in the last stage of disease. The head seemed to suffer most, and from her general appearance I was led to conclude, that water either had collected in the brain, or was on the point of being effused into the ventricles. Delirium with frequent screaming, alternated with occasional intervals of stupor or heaviness, black dry tongue, pulse seldom under 130, beating of the temples, face sometimes pale and sometimes flushed, were the most prominent symptoms. A two grain pill of calomel was given, succeeded by a draught of the oleum ricini. Leeches were applied to the temples, and



the head was shaved. The symptoms were not improved. The temporal artery was then opened, five ounces of blood were taken, and a blister applied to the occiput and nape. A pill, consisting of two grains each of calomel and ipecacuanha, was given twice, and sometimes thrice a day with the exception of those days on which oil draughts were administered, so that by the end of the sixth day after admission, ten pills had been taken. The gums now became sore, and every alarming symptom disappeared. Copious ptyalism succeeded, accompanied with great tumefaction of the face and lips. This state had continued for four or five days, when a small vesicle was observed near the left angle of the mouth, which in a short time assumed a black colour, and in a few hours increased to the size of a sixpence. It was unaccompanied by the slightest perceptible inflammation, and occasioned no pain whatever. By the following day it was as large as a half-crown piece, and in appearance exactly resembled a superficial sore that had been dusted over with finely powdered charcoal. The salivation continued attended with great foetor. The fermenting poultice was applied; bark and opium were administered internally. Wine was given; the sore was also occasionally washed with tincture of opium, and sprinkled with the powdered bark, but without effect. The gangrene extended itself until a part of the cheek, about two inches in breadth, was eaten

away. The right angle of the mouth was now affected, the disease commencing precisely as already described. The respiration became laborious and oppressed, and death at last took place on the 19th day after admission, being the 13th day from that on which calomel had been last prescribed, and the eighth from the time when the gangrene first shewed itself.

Whether the above was from its commencement essentially a case of hydrocephalus internus, I am by no means prepared to decide. Whether the accompanying fever was symptomatic of the primary hydrocephalic affection, or whether a low irregular fever, neglected at the commencement, and acting on an organ preternaturally disposed to derangement, might not have occasioned in the brain that particular morbid condition which the symptoms so strongly indicated, it is by no means easy to determine. From the malignant character which the fever assumed, and the marked typhoid symptoms which attended it, I am inclined to adopt the latter supposition. However, in either case, the brain being the organ affected, and under a state more or less of inflammatory excitement, the leading indication evidently was, to allay that excitement, and to correct any mischief which it might have occasioned by its continuance. With this view the local abstraction of blood was resorted to, and in order



more effectually to accomplish the same object, mercury was prescribed so as to affect the system. In the course of six days twenty grains of calomel were taken ; the mouth became affected, and immediately the patient appeared free from disease. So far every thing proceeded more favourably than under such unpromising circumstances could have been expected, and so far the propriety of the course adopted seems to be confirmed by the result. But an unexpected train of symptoms succeeding, and terminating in a manner so unfavourable, we are naturally led to inquire into their causes. It becomes a matter of much importance to determine whether they depended on the previous treatment, or whether they should rather be ascribed to a different origin. In the present instance, I think that the mercury, though it chiefly contributed to the cure of the primary disease, yet acting on a system of extreme delicacy, was, nevertheless, the cause of the subsequent untoward event. It would appear from the violent effects of the medicine, that there existed in this instance an unusual susceptibility of constitution by which its ordinary influence was modified and rendered noxious, for much larger quantities of mercury are frequently exhibited to younger patients without producing salivation. Could this peculiarity have been foreseen, it is evident that the medicine should either in the first instance have been entirely withheld, or ad-

ministered with greater caution. On the other hand, were we to anticipate in every other case a similar result, our practice would become so vacillating and timid, that a great proportion of our patients might die through our hesitation in employing an active remedy until we had first satisfied ourselves by cautious experiment that it was not likely to prove injurious. A few exceptions ought not to preponderate against the great majority of well established cases, in which a particular treatment has been safely and beneficially adopted. We do not consider the remote possibility of aneurism, or of secondary hæmorrhage from the temporal artery, sufficient to contraindicate the employment of arteriotomy in a case of violent phrenitis. Thus also were I again to treat a patient similarly affected, I should not hesitate to have recourse to mercury, as the medicine on which, after blood-letting, I ought chiefly to rely.

The peculiar kind of gangrene which I have described, besides is not always, when it occurs, the effect of mercury. I have been informed, that among the children in the wards of the House of Industry, a few rare instances of a similar gangrene of the cheeks were observed, which commenced with aphthous ulceration of the mouth. These cases also terminated fatally. In children of a scrofulous habit, gangrenous ulcers have appeared in a



day or two after the application of a blister. In a case which occurred under my own care, a blister was applied to the chest of a child about three years of age, for a pectoral affection. The breathing was relieved and the child seemed likely to recover, when white vesicles appeared behind the ears, which formed small, distinct, and excavated ulcers discharging a foetid sanies, and slowly extending themselves by corroding the surrounding parts. The powder of cinchona, carrot poultice, strong decoction of chamomile, and ointment of the *scrofularia nodosa* were applied to the sore without appearing to produce the slightest benefit. The part of the chest which had been vesicated, continued unhealed, and along its edges similar vesicles appeared. The child's strength rapidly failed, and some hours previous to it's decease, all the sores had become black and gangrenous.

I once observed in an adult a strange eruption, which at the time I ascribed to the application of a blister. Twenty or thirty vesicles, about the size of a pea, appeared on different parts of the body on the second day after a blister had been removed from the back of the neck, where it had remained for 18 or 20 hours. Instead of breaking and healing over, or extending themselves superficially and then healing, the morbid change was altogether confined to the portion of the skin

immediately under the vesicle. This seemed to lose its vitality, and formed an eschar precisely as if it had been acted upon by a solution of caustic alkali. The whole then separated, forming a deep and inirritable sore, which by degrees slowly healed. There can be little doubt but that in these instances, a peculiar constitutional susceptibility existed, which disposed the individual to be affected in an unusual manner by substances which do not in general produce such injurious effects. Of the cause of this peculiarity of constitution we cannot offer any rational explanation, and we are equally at a loss to ascertain *a priori*, the existence of such susceptibility with respect to the effects of particular substances. This subject has not yet received that attention which it deserves, nor have we a sufficient number of facts to authorise us to attempt to generalize them.



A WELL MARKED CASE  
OF  
LIVER-COUGH,  
WITH SOME CASES AND OBSERVATIONS

TENDING TO SHOW HOW FREQUENTLY THE LUNGS AND OTHER VISCERA SYMPATHIZE WITH DERANGEMENTS IN THE LIVER, WHETHER ORGANIC OR FUNCTIONAL.

BY WILLIAM BROOKE, M. D. M. R. I. A. &c.

Ἡ δὲ κρίσις χαλεπή.—HIPPOC.

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*Read September 6th, 1820.*

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I AM fully aware that the publication of *solitary cases*, be they ever so extraordinary, tends little to the general improvement of medical science; the following however may, perhaps, be considered an exception to the rule, because the cough, which was the distressing and prominent symptom, was such as, in the three first attacks of the disease, to deceive practitioners of very considerable acuteness and experience.

It is a well known fact that, from the extensive contiguity of the upper and posterior portion of the liver to the right lobe of the lungs, a thin membrane, in many places, only intervening, the ordinary healthy functions of either organ may appear materially deranged by the actual disease of the other, the sympathizing viscus being, as to its own organization, perfectly sound : hence it occurs, that the physician now and then meets with a disease which may, as far as can be judged from the leading symptoms, indifferently belong to either of these viscera, or to both, should the complaint have been of long standing. Under such circumstances, to form an accurate and satisfactory diagnosis, is almost impossible, and yet, not to ascertain the matter must necessarily lead to serious error where, as in most cases, the appropriate remedies are so different according as the disease may happen to exist *above* or *below* the diaphragm. In such a dilemma, we in vain look to the schools for rules to form our diagnosis ; in vain we analyze the symptoms, and divide them into essential or pathognomonic, common and accidental ; nor does the deepest sagacity of the practitioner, assisted by accurate and extended experience and the most attentive observation, serve him much better ; yet it must be allowed, that these latter qualifications are our surest, almost our only guides.



The following is, I conceive, a case in point, and as the cough, for many days, was the only symptom, will be deemed, I should hope, by the Association, illustrative of the foregoing remarks :

In October 1818, Master H. about 12 years old, was placed in one of the large public schools in the north of Ireland : he was a hardy, healthy boy, accustomed to a good deal of exercise in the open air, particularly on horse-back : in about a month after he was suddenly seized with a severe and very frequent cough, which not yielding to the usual family management for recent colds, persevered in for a few days, medical assistance was called in ; the boy was bled at the arm, blistered, vomited, and purged, got sudorifics, expectorating medicines, and opiates, without the smallest relief. After a fortnight, the cough being nothing better, he was recommended to try his native air, and being taken home, gradually recovered, the cough having continued about five weeks.

In January 1819, he returned to the school, and was again seized as before, though in a milder degree ; he was treated, with the exception of bleeding, as on the first occasion, and without any apparent benefit, but being taken home, immediately recovered. He returned once more, but it was only to suffer a third attack of his

cough, which, in severity and duration, was nearly equal to the first. A full consultation of the neighbouring practitioners was now called, and every effort made for his relief, but in vain ; in eight or ten days he was able to travel, and went home, with the advice never to return, as the air was supposed particularly to disagree with his constitution.

I regret that I had no communication at the time, nor has any opportunity offered since of learning from the gentlemen who attended him, what was the opinion they formed of the case ; but from the practice they pursued, and from what my patient reported to me, there can be no doubt but the lungs were supposed to be the seat of the disease.

Early in May he caught the measles ; the disease went on regularly and with great mildness ; during the four or five days that the eruption was out, he coughed very much ; the cough, however, was just as is usual in the complaint, and not at all like the other, as his mother told me.

Mr. and Mrs. H. had determined on spending a few weeks at Cheltenham during the summer ; they took their son with them : I saw him here as they passed through to England, and he ap-



peared in perfect health though thin, he drank the water moderately, and on their return he spent the autumn and first months of winter at his father's in excellent health. At Christmas it was arranged to place him at a school in this city, and towards the end of January was brought up. My directions were, to visit regularly twice a week, and to report home immediately in case of any cough, &c.

On the 8th of February last I was sent for to see him ; the preceding day he had taken a long walk with his school-fellows on the Clontarf shore, the day was fine, but the wind was cold from the north east. He slept well as usual, but the next morning felt a cold in his head, and while at breakfast the old cough suddenly came on, which was so loud, and apparently so distressing, that he was ordered up to his bed. I was not at home when sent for, and in the mean time he got two pills which were in the house, and commonly given to the boys when they caught cold, and were, I believe, composed of extr. colocynthidis, comp. calomel, and pulv. antim. I saw him about two o'clock; the pills had both vomited and purged him, but without at all affecting the cough.

Upon the most minute and patient examination, I was unable to detect the smallest deviation from health, or the smallest derangement in any of the organs or their functions, save the cough alone

This was the sum total of all his ailment that I could discover, and certainly it was a most extraordinary cough, and unlike any thing I had ever heard before : he told me it was precisely similar to the former attacks, and appeared quite in despair of being able to obtain any relief. He made a deep inspiration, and then uttered a short cough or ejaculation, sounding somewhat like *haghss*, in an extremely harsh, loud, and disagreeable tone, conveying to the hearer an idea of great distress in the patient, but which really was not the case, as he never complained of any thing until evening, when he always became weary, and felt a general soreness in the muscles of the thorax and abdomen. This monotonous cough was repeated three times very rapidly, he then fully inspired, and coughed as before ; and again for the third time inspired and coughed. After this he became quiet for some time, the interval varying from one or two minutes to four or five ; so that each paroxysm may be said to have consisted of three distinct inspirations and nine expirations, the air taken in by each inspiration being expelled by three coughs or ejaculations as above described.

To gain time for reflection, as well as for observing the course of the cough, and supposing it possible that some suppression of the cuticular discharge had been produced during his walk on the preceding day, I ordered him to remain in bed,



to take a mild saline sudorific mixture, and to have his legs and feet well stuped for an hour.

9th, Considerable and general perspiration during the evening and night, without the least abatement of the cough ; slept well for eight hours, during which he never coughed once, but the moment he awoke it began. I again examined him accurately ; pulse 70, soft and regular ; skin cool, and no irregularity as to the temperature of the body ; tongue bright and moist, no bad taste, or thirst, or anorexia ; breathing natural, and can deeply inspire without any sense of tightness or increase of cough ; belly flat, and no fulness or tenderness on pressure in the right hypochondrium ; eyes clear ; no head-ache. I only restricted him from animal food and wine, and as he seemed weary from coughing, and inclined to indulge in bed, he was gratified.

10th, No change.

11th, Bowels confined ; and as he wished for some active physic, on the former attacks it being the only remedy from which he could perceive any relief, I ordered three grains of calomel with two of genuine James's powder, in a pill, to be taken at bed-hour, and a saline purging draught for the next morning.

13th, Several large and very offensive bilious stools yesterday ; not the least alteration in the cough ; tongue white, and back part thickly furred, a circumstance which I think I have often observed suddenly to take place in incipient hepatic affections, after a three or four grain dose of calomel, and probably to be accounted for from the peculiar influence of that medicine over the secreting function of the liver, as well as its action on the excretory ducts.

14th, On my entering the room this morning he told me he had, after tea the evening before, felt some pain in the right side ; he went to sleep as usual, but on the cough returning when he awoke the pain became troublesome and sharp. I found a considerable tenderness on pressure : I made him stand up and lean forward over the back of a low chair, in which position, when he flattened the abdominal muscles by a deep inspiration, a tumour occupying a space that might in circumference measure about four inches, was very perceptible to both touch and sight, situated below the points of the seventh and eighth ribs. He had had no rigors, nor did there appear any febrile symptom, except the tongue which continued white and furred. He said he was thirsty, but I believe it was only an excuse for eating oranges, which he got *ad libitum*. I ordered six leeches to the side immediately over the tumour ; on their dropping off, that hot stupes



should be applied so long as any blood continued to flow. I also directed a scruple of the pil. hydrargy. with ten grains of the submuriate of mercury, to be made into twenty pills, with con. ros. two to be taken morning and night.

19th, Immediately after the last report, Master H.'s father and mother came to town, and had him removed from the school. They fully confirmed the correctness of his own report to me as to the perfect similarity, in every respect, of the present with the former attacks, except the affection of the side. The leeches entirely removed the sharp pain, but he still feels sore on pressure, and the tumour is more distinct, and quite evident as he lies in bed. He has finished the twenty pills without any apparent benefit, and continues to cough exactly as above described from the moment he awakes, about eight or nine o'clock, until nine or ten P. M. when he falls asleep quite exhausted, and during the entire night he is never once heard by his mother, at whose bed-side he is placed.

He remains in bed during the day, because while occasionally up for a few minutes, to have his bed made, &c. he finds himself much more shook by the cough than when in the recumbent posture with his head on a soft and well stuffed pillow.

Finding no change in any one respect, either for better or worse, I asked for a consultation, and this day had the assistance of a very eminent physician. We determined on applying a blister to the tumour, and on keeping up the discharge for a few days ; and prescribed pil. hydrargy. gum. ammonia : sing. scrup. pulv. jacob. ver gran. quinque in ten pills, two each night ; the bowels were in a soluable, easy state, and the discharges from them, as well as the urine, appeared quite natural. The blister rose well, and he took his pills regularly. About the 1st of March his mother perceived a difference in the cough ; it seemed gradually to lose its regularity ; was less harsh and distressing, and the paroxysms less frequent ; the tumour had subsided, and the part only felt tender when hardly pressed upon with the fingers. By the ninth his mouth was sore, with very foetid breath ; the tongue was deeply covered with a yellowish brown fur ; he complained of head-ache, thirst, nausea, and uneasiness in his bowels, which had been confined for the two preceding days ; he coughed but seldom, and only one or two *barks*, as he called them, at a time. I omitted the mercury, and ordered some infusion of senna, with manna, sulphas kali. and tinct. jalappæ. The quantity of fæces brought away by this purgative was truly surprizing, and so peculiarly offensive, that they could not be kept in the house a minute. The tongue immediately became bright, and from



that day he has never coughed once. A few tepid baths enabled him to return home, where he remained until after Easter ; since then he has been at his school, enjoying the most perfect health and spirits up to the present moment, September the 4th.

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It was my first intention to have given Master H.'s as a perfectly naked case, merely as a *beacon* to my younger brethren ; for, to the experienced and well-informed physician, it can afford little perhaps of either information or novelty. But, from the conversations which I had with several of the members of the Association after the case was read, I have been induced to enlarge my plan, and to look a little more particularly and deeply into the subject, with the hope of being able to form, perhaps, even a beginning towards an accurate diagnosis ; the want of which we have still to deplore, and to which the attention of the profession is most seriously requested.

It is surprising how much more frequently this simulated affection of the lungs has occurred, than one would have imagined. My friend Doctor Joseph Clarke has mentioned two cases ; the first, that of a gentleman of acknowledged bilious habit, and constant foul tongue. The second, an only daughter and great pet : she took medicines badly ;

her tongue was very foul, and calomel was advised as the only remedy she could be prevailed on to take, to regulate her bowels. So seriously ill was this girl, (aged about 14,) that a friend staying in the house with her, requested to know when she was likely to die, that she might avoid the melancholy event. Both gradually mended under the use of mercury, and survived several years. The late Doctor Harvey saw the gentleman several times in consultation. Doctor Reid was concerned in a case with the late Doctor Bell, of precisely a similar kind. Other instances I could mention, were it necessary.

But to proceed, there can be no doubt as to the real nature of the above case ; it is a well marked instance of the slow and insidious manner in which *organic* derangement in the liver may advance, and how accurately and successfully it may simulate a disease of its neighbouring viscus, the lungs. Doctor Faithhorn remarks, a diseased state of the liver we find liable to affect the adjacent organs, the lungs, and to induce such derangement in their functions, at one time from mere sympathy, at another from pressure, as to occasion those forms of disease which simulate chronic catarrh, asthma, and even pulmonary consumption itself.\*

\* See Facts and Observations on Liver Complaints and Bilious Disorders. London, 1820.



In Master H.'s case, the active means used in the three first attacks to subdue the cough, supposed to be altogether pectoral, checked the progress of the incipient obstruction in the liver; but the appropriate remedy not having been used, the affection maintained its hold, and at last developed itself with sufficient precision. This entirely agrees with the observations of Doctor Faithorn, who tells us,\* “that from the low degree of excitability which the liver possesses, disease, arising from an undue fulness of the vessels, may long exist unnoticed.” And he also says, “chronic hepatitis, the most frequent in those countries, is slow in its progress and deceptive in its appearance, and may continue for years without the patient being aware of its existence.”†

Authors of high authority, from Morton down, mention the connexion between these two organs, and show us, that the sympathy which exists is such and so intimate, that the disease of one organ; though strictly proper to itself, is often sufficient to produce a disease in the other equally proper to it; and this *law* seems to hold good as to the liver, whether the disease there be *organic* or *functional*.

The following case, which I shall give very

\* Page 14.

† P. 78.

shortly, in addition to master H.'s, will, I presume, be sufficient to prove the first position of the above law, as to the organic disease of the liver affecting the lungs.

Miss M. æt. 30. of an exceedingly scrofulous constitution, was closely confined in a warm chamber for some months during the last winter, in attendance on a sick friend. In March she complained of occasional severe head-aches with throbbings in the temples, and flushed face: these were relieved by mild saline purgatives and a few leeches; shortly afterwards she began to cough, which daily increased, and was only troublesome during the day, and particularly after breakfast and dinner. There was no pain any where; no difficulty of respiration; no expectoration; her appetite became bad, and she was thirsty; white tongue; made very little water; and complained of a constant full feel about the stomach and bowels, and occasionally observed her right foot and leg swelled at bed-time: laxatives, with expectorants and mild anodyne sudorifics, were given without effect. The supposition that the cough arose from inflaming tubercles in the lungs, and the consequent necessity for decided practice, alarmed the lady and her friends, and she came to town. I saw her immediately on her arrival, and observed her eyes were quite yellow: she denied any pain in the right side, but felt very acutely when I firmly



pressed her with the points of my fingers under the ribs. I ordered 8 leeches to the part, and was informed the next morning, that a fullness there was quite evident: I then more particularly examined, and found a manifest enlargement of the liver. Her pulse was hurried, and the tongue much covered. I prescribed some pills composed of pil. hyd. gum. ammoniacum, powered squill and jallap; 2 to be taken 8vis. horis, and a mild saline purgative every second or third day. Her diet was strictly regulated, as animal food or wine irritated the cough to quite an alarming degree. In about three weeks the tumour subsided; the cough gradually ceased, and she rapidly recovered her usual health. I continued the mercury until her gums became tender.

In these two cases the cough could only have arisen from sympathetic connexion:—"When this irritation," says Ayre, "is directed to the membrane lining the larynx and trachea, it gives rise to the bilious cough, which, in many cases, very strongly resembles some of the forms of phthisis pulmonalis.\*"

A case occurred to me in November last, in the management of which I had the assistance of Doctor Percival, equally conclusive, I conceive, in proving the second clause of the law, as to the

\* See Doctor Ayre on Marasmus.

power of the *functional disease* of the liver, in superinducing diseased action in the lungs.

A gentleman residing in the country, from his youth up had been accustomed to early rising, and to spend each day in full and active exercise in the open air, hunting and shooting as the season allowed, and often taking long journeys on horse-back, but who had certainly spent his evenings in company, and indulged in the luxury of a well kept table. When above 50 years old he, in the beginning of last year, began to feel himself unwell. He caught cold on every trifling occasion, was feeble, disliked his usual occupations, and sat over the fire ; he became bloated and full-bellied, but suffered no pain or fever. In the summer he visited Cheltenham, and received much benefit from the waters. In October he got a severe feverish cold, which confined him to bed for some days ; the cough was hard and dry, and his head ached much : a few leeches to the temples afforded relief, but the cough continuing severe, with increased fulness in the abdomen, and loss of strength and spirits, induced him to come to Dublin. Doctor Percival saw him with me on the 12th of November last. He had considerable frequency of pulse ; skin hot and dry ; breathing hurried, and, in the recumbent posture, laborious ; cough not very frequent, but hard, and exciting sharp pain in the forehead ; the expectoration was very scanty, and consisted of a thick and tough



yellow mucus ; tongue furred ; abdomen very full, but no pain in either side, or appearance of the liver being enlarged ; the eyes were quite yellow ; and the urine passed in small quantity, and loaded with bile ; he was extremely feeble, and very uncomfortable in his feelings. We had no hesitation in ordering eight ounces of blood to be taken from the arm, and prescribed pills composed of the blue pill, gum ammoniac and ipecacuanha, to be taken three times a day, and to have the bowels kept free by mild saline purgatives warmed with the tincture of jallap. The bleeding almost immediately removed the great anxiety, and having passed off some large and highly bilious stools during the evening, he spent a comfortable night : he was, however, disturbed early in the morning by the cough, which became frequent for an hour or so, but was soft, and accompanied with a freer expectoration. This plan was pursued for several days ; the bowels freely evacuated themselves, and the cough returned each morning about six or seven o'clock, and continued about an hour, during which he threw up a quantity of thick yellow homogeneous mucus, sometimes amounting to nearly a pint ; for the remainder of the day he only occasionally coughed, and never while asleep. The breathing became gradually better, the belly got soft, and in about a fortnight his gums becoming tender, the mercury was omitted, and he rapidly recovered, and has continued well ever since.

For several days we feared that the matter expectorated so abundantly was purulent, and had somehow made its way from the liver into the lungs, but we afterwards entirely relinquished the apprehension; the blood drawn on the first day was not the least sizzly, but the serum was so saturated with bile, that it tinged linen like the urine in jaundice.

In this case the functions of the liver appear to have been alone diseased, and yet the distress communicated to the chest was much more than in either of the two cases in which the liver was obstructed, and manifestly enlarged.

I hope I may not be understood as presuming to give the above a positive case of purely functional derangement; I only conjecture it to have been such, and throw out the opinion to the profession, as one worthy of their consideration and future inquiry. I know that Doctor Faithhorn remarks, and I believe justly, "that patients labouring under chronic hepatitis are particularly susceptible to sudden colds about the head, throat, and chest, from the slightest causes, occasioning considerable aggravation of the hepatic affection; the blood repelled from the surface, over-distending the vessels in the liver, and necessarily increasing the congestion."\* And further, "the

\* P. 29.



existence, extent, and issue of hepatic disease, is chiefly to be learned from a careful and regular observation of the alvine discharge, examination alone, however proper," says he, "will not invariably determine the precise condition of the liver, as this organ, to the touch, may feel in the most correct state at its inferior edge, while at the same time its upper surface may be enduring the greatest inroads of disease and alteration of structure."\*

The learned Morton was not unacquainted with the sympathy which exists between the liver and the lungs, and was aware how easily the disease of either viscus may excite diseased action in the other, which immediately falls into that disease proper to itself; hence, in his Dissertation on Consumption, he gives a chapter, de Phthisi Icteritia, seu Hepaticâ. "This consumption," says he, "est semper chronica, et plurium annorum, utpote a causa tardâ et lenta procedens. Sputum etiam est magis viscidum, quam copiosum, uti in omni phthisi tarda esse solet. Sicuti cum inappetentia, et cibi fastidio ista phthisis incipit, ita in hydrosem asciticum tardum et dolorificum fere semper terminatur."

Doctor Paisley's well known Letter, given at full both by Mr. Curtis, in his book on the Diseases

\* P. 163.

of India, and by Doctor Saunders, in his Treatise on the Liver, need hardly be referred to; yet one paragraph is so much to our present purpose, that I cannot resist the quotation:—

“ I cannot avoid putting you on your guard against a disorder of the liver which I have seen in Europe and several times in India, attended with fatal consequences from its being overlooked. The disorder is what may be called a Liver-cough; the obstruction in this case is generally accompanied by some degree of inflammation and pain, though seldom acute unless pressed with the fingers, or when the external membrane is also affected; but it often happens without pain or inflammation: the cough is entirely a sympathetic complaint, and is the misleading symptom of the disease. The patient pronounces his own disorder a cold, and it often happens is put, without further inquiry, on a course of ineffectual pectorals, takes exercise, and shifts his situation for health, until his liver suppurates, or becomes an indolent mass of irrecoverable obstruction.”

If further authority should be deemed necessary, I can instance Portal's opinion, which is strong, and to the point:—

“ Le foie, qui remplit des fonctions si importantes dans l'économie animal, est un des organes



dont on connaît le moins les alterations ; tantot on lui attribue des maladies dont il n'est point atteint, et quelquefois on méconnaît celles qui ont leur siège dans ce viscere, au point de les croire dans des parties qui sont dans l'état le plus naturel.

“De telles mètises sont cependant des grande consequence, qu'elles ont coûté la vie a des malades, qu'on eût facilement guéri si on eût connu le veritable siège de leur manx.”\*

From the above recited cases and authorities, we can no longer hesitate to allow the existence of a distinct liver-cough, and also, that the lungs do now and then seriously participate in a diseased liver, and in such a deceptive way, as to mislead the practitioner, and induce him to adopt a very erroneous and ineffectual practice. A repetition of such mistakes must be naturally expected, until a further investigation of the subject, and more accurate observation, enable us to lay down a precise diagnosis, a desideratum which, I trust, the present active spirit of inquiry will speedily supply. In the mean time, it may assist the practitioner to recollect, that in the simulated disease, the cough is uniform, harsh, unaccompanied with pain in the chest, and in general is dry, and then

\* Vol. 1. p. 228.

without difficulty of breathing, or dislike to the recumbent posture : when there is any expectoration the matter rejected is scanty and viscid, and never, I believe, tinged with blood. This cough does not fatigue the patient, as might be expected, and is chiefly troublesome during the day, particularly after meals ; and I never knew it to occur during sleep. In phthisis, on the contrary, the cough is never uniform through the entire course of the disease, it comes on with the fever, and strictly following its course, changes in each stage of each paroxysm : in the cold fit it is dry, short, obstinate, troublesome and fatiguing, with manifest increase towards the night : in the second stage it is diminished and less frequent ; and in the third, when the sweat breaks out, towards morning it becomes soft, and is accompanied by a free and often copious expectoration. It is well known how easily the phthisical cough is provoked—a momentary exposure to cold ; a change in the wind ; a slight exertion of the voice ; a sudden shake of the body ; a little smoke in the room ; nourishment a little more stimulating than ordinary ; will each excite the cough, and keep it troublesome for hours, but which certainly is not the case with the liver-cough which I have seen. We are also told, that when the seat of the cough is in the lungs the cough occurs during, or appears to be induced by, the inspiration ; but that when the cough is sympathetic, and arises from



derangement in the stomach, liver, intestines, bladder or kidney, or from worms, or pregnancy, the cough occurs in the expiration.\*

Saunders remarks, that calomel generally aggravates the cough, and indeed every symptom of phthisis; which is not the case when the cough is hepatic, for then it only yields to mercury, demulcents or opiates do not appear to possess the smallest power over it. I do not know that we can gather any certain information from the pulse; in phthisis it is always frequent; in Master H.'s it was perfectly natural, but not so in the other two cases.

\* See Dictionaire des Sciences Medicales, vol. 42. p. 77. where the authorities for the different causes of cough, as above-mentioned, are given. The editors of that learned compilation refer in to the word *toux* for fuller information—but the work has not yet come down so far.

A CASE  
OF  
ERETHISMAL STATE  
OF  
*The Brain.*

BY WHITLOCK NICHOLL, M. D.

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*Read by Doctor Brooke.*

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IN the paper which I lately submitted to the notice of the Association, containing remarks on affections of the cranial brain in infants, I described a state which I termed *erethism*; a state distinct from inflammation, in as much as there is, in the uncombined form of it, no perceptible increase of the quantity of blood in the cerebral blood-vessels. As the distinction of this state, and the knowledge of the separate existence of it, are, in my opinion, points of the highest importance in the management of infantile diseases,



and, indeed, in that of diseases of adults, I beg to remark, that I am every day more convinced of the justness of the distinction of the erethismal state of the cranial brain from other conditions of that substance. It is a state often overlooked at its commencement, confounded with inflammation, or with remittent fever in its advanced stage, and the torpor which succeeds to it, and which after a time disappears, and is succeeded by a recurrence of the former symptoms, which again lead to torpor; this is considered as the effect of increased exhalation, to which after a time the brain *accommodates* itself, (to use a common medical phrase,) until a fresh effusion causes a renewal of the symptoms, whereas in many of these cases no increased effusion has occurred. Erethism is a state not confined to the cranial brain, but it also occurs in the spinal brain, as do also all the other states which I enumerated in that paper.

The following case, which is yet under my eye, illustrates many points which I have attempted to describe :—

Mr. Acton, a very intelligent surgeon of this town, has an infant daughter, who is between eight and nine weeks old; she was, from her birth, lively, very wakeful, scarcely ever sleeping during the day; highly sensible to impressions: when

she was scarcely six weeks old she awoke as with a hesitation of breathing, and the muscles of the face were convulsed. She became still more restless, and was very fretful. Nothing amiss had ever been noticed in the character of her stools. She was suckled by her mother, a very healthy young woman. Her father gave her a dose of calomel, and put her into a warm bath; the stool which succeeded to the exhibition of the mercurial purgative was perfectly healthy. After this I saw the child: it started when the door was opened, or when a chair was hastily moved, or when any one coughed, or if any part of its body was touched. It cried very much, and very loudly, and was only appeased, and that momentarily, by being placed in a sitting posture, by being carried about, or by being put to the breast. The pupils were of a natural size; there was no vomiting; no heat of skin; no heat of the head; no flushings of the cheeks; no increased throbbings of the arteries of the neck and head. When this highly sensitive and wakeful state had continued for several hours, the child became gradually more heedless of noises, until, at length, it ceased to notice them; the crying then subsided, and the child bore a horizontal position. In this state, the eye appeared as if insensible to the light of a candle; the pupil, which was rather enlarged, vibrating, as it were, between contraction and dilatation when strong light was thrown on the eye; the fore-arm



bent on the arm; the fingers clenched; the thumb laid flat across the palm; the upper extremities, in this state, raised, in constant motion; the head sometimes moved about, but not much so; the lower extremities sometimes suddenly drawn up; the lips moving; no moaning; occasional rolling of the eyes; the eyes fully open; not a moment in which some muscles were not in quick action; the body bent backwards. When this state had continued for four or five hours, sleep came on, out of which the child awoke, and appearing in its usual state; its arms pliant; its hands open: then came on the fretful, crying, restless state; then the torpid restless state, during which the muscles were in constant action; the fore-arm bent; the fingers clenched as before; then sleep; after which, apparent recovery. And thus did the sensitive erethismal state, followed by torpid erethism, by sleep, by recovery again, repeatedly run its course. The brain, after the highly sensitive state had been long kept up, gradually assuming a state approaching more and more to torpor, until its actions were at rest, and then was sleep present; but after a short rest, the brain AWOKE to its original state. It was remarked, that when the sensitive state of the brain recurred, the bowels were relaxed, notwithstanding the use of opium; the eyes were suffused; the child sneezed, and had an increased quantity of moisture in the nostrils, and of saliva from the mouth: when the

sensitive state declined, the bowels were no longer relaxed ; the coryza disappeared, secretion having been increased by the erethismal state. At one period, during the torpid erethismal state, there was complete opisthotonos, to a great extent, so that the spinal brain was affected also with the erethismal condition.

The head first of all was blistered : during the state of opisthotonos, the whole of the spine was blistered. The application of the blister to the spine appeared to give much relief, especially by its first operation ; afterwards it was thought to irritate too much. A grain and a half of Dover's powder was the remedy always resorted to : if given during the highly sensitive state, it allayed the irritation, and when given during the more torpid state, sleep gradually came on. In one instance, the fretful and the sensitive state and the more torpid state occupied two nights and the intervening day, during the whole of which time there was scarcely any sleep—none for a longer period than a few minutes, then sleep came on, which lasted several hours. The Dover's powder generally quieted the child in three or four hours ; a tea-spoon full of syrup of poppies had no effect at any time. Musk had no good effect. The muscular actions generally came on at night. I gave decoction of bark in one of the intervals, a tea-spoon full every hour : I thought that this



combined with the p. ipecac. c. had a slight good effect ; but it was not followed up, as Mr. A. thought that the child was in pain after taking it. James's powder made it sick. After the child had continued about a fortnight in this state, the train of symptoms being repeated every day, or every two days, it has continued for the last fortnight without any marked symptom of disease, being better than it has been since its birth ; yet there is still an absence of sleep during the day ; so that I suspect that there exists some congenital formation of the cerebral structure, which is incompatible with the long duration of health, and, perhaps, with that of life. The case as yet has been a well marked one of pure erethism, unmixed with the slightest perceptible alteration in the state of the blood-vessels, and alternating with a more torpid state, which is the consequence of the previous highly sensitive state.

A CASE  
OF  
MELÆNA,

COMMUNICATED BY LETTER TO DOCTOR BROOKE.

BY WHITLOCK NICHOLL, M. D. &c.

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*Read by Doctor Brooke, 2nd of Oct. 1820.*

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Dear Sir,

I FEEL much pleasure in sending you the following brief report of a case of melæna, in which a remedy, pointed out by yourself, in the first volume of the Transactions of the Association of the College of Physicians in Ireland, proved decidedly beneficial.

Mrs. B. aged between thirty and forty, a very delicate and highly nervous woman, the mother of five or six children, had suckled her youngest child much longer than her medical attendant had judged it prudent that she should do. She had laboured under severe cough, and had complained



of pain in the chest; it was feared that she would become phthisical. She derived much relief from the application of a blister, and lost the cough. She was afterwards attacked with vomiting and diarrhæa; she could not retain any food in the stomach, and she remained without sleep. In this state, she had been for some days. I visited her on June 27, 1820; I found her extremely languid, so much so, that she seemed scarcely able to converse with me. She was in a state of great apprehension and alarm respecting herself. The abdomen was rather full; the tongue moist, streaked with white; the pulse not strong, beating about 115 or 120 times in the minute; the lower extremities were cold, and they were wet with perspired fluid. An increased degree of dejection and of coldness came on generally every evening. Stools were passed very frequently; they were perfectly liquid; their colour denoted a due secretion of bile. Her medical attendant had, some days before, thought that the secretion of bile was rather deficient. She complained of uneasiness within the abdomen, but not of severe pain. She bore pressure on the parietes of the abdomen. On the day preceding that on which I visited her, she complained of pain in the right hypochondrium, extending through the bowels; a blister was applied over the right side, and in the morning the pain subsided. She had latterly been taking hydrargyrus cum cretâ and

ipécacuanha in small doses, with saline medicines. She was directed to continue taking small doses of the hyd. cum cretâ in conjunction with rhubarb and confectio opii, each in small quantities.

Her medical attendant reported to me, that she appeared to be going on satisfactorily until the evening of the 29th of June, “when a most unaccountable state of wretched agitation and terror took possession of her mind, (which it was impossible for some time to relieve her from,) attended with most profuse perspiration; her legs and knees perfectly cold, her tongue extremely dry; great thirst; pulse almost countless, but full; after some hours she became more calm, and on the following morning appeared considerably better, the alvine evacuations assuming a more healthy appearance, and all other symptoms improving. In the evening of this day (the 30th,) a recurrence of the same unpleasant symptoms took place, with an insuperable dread of sleep: she says, that she cannot sleep, as she is impressed with a conviction that she shall never again awake; this dread of sleep appears to have kept her awake during the whole of her illness. She passed in the evening two large evacuations of liquid bile, with a considerable quantity of blood, the abdomen being very full, but free from pain, and bearing pressure.”



On the next morning (July 1st,) I visited her at 8 o'clock. I found her in a state of great anxiety, repeating that she must die, but that she cannot die; her face palid; the nose flattened, sharpened, white, and almost transparent: the pulse jerking and throbbing, beating 130 times in the minute. She had passed a very large quantity of liquid stool; that which had been voided in the preceding evening had a more decided tinge of red, and contained black grumous clots; the stools which passed on the morning of this day (the 1st,) were perfectly black, thin, and watery: the whole of them were of an inky black, entirely inodorous, and free from even a vestige of fecal matter. She had passed several pints of this fluid, and it continued to come away very frequently.

At nine o'clock A. M. I gave her the following draught:—℞ Ol. terebinth. ʒss; syr. papav. alb. ʒi; aq. menth. vir. ʒi. Immediately afterwards, the following clyster was injected carefully, and with some force:—℞ Ol. terebinth. ʒi; mucil. acaciæ, ʒiss; decoct. avenæ. ʒxij.

The injection was retained in the bowels one hour; when it came away it was free from all tinge of red, or of black. At noon, a draught was repeated. At 3 P. M. the clyster was repeated; it remained in the canal half an hour,

and it returned without any vestige of discoloration, followed by flatus. At 4 P. M. a draught was repeated. Two more draughts were taken in the course of the night.

On the morning of the 2nd, I found that she had not slept; the bowels were less tense; no more discoloured stools had passed; pulse 120, softer. She took broth, beef-tea, arrow-root, and gruel. She was directed to take 20 drops of the ol. terebinth. with four drops of the black drop, every four hours, and to swallow at night, five grains of pilula hydrargyri. She took three of these draughts in the course of the day.

On the following day she was better; her looks were improved; she had slept two hours, and had short dosings afterwards; her spirits were more lively; her bowels were open; the stools very liquid, containing fresh, healthy bile; the abdomen was much reduced; pulse softer. The turpentine was discontinued, and she was directed to take saline draught, with pulv. contrayervæ simpl. together with such repeated doses of the black drop as should be requisite to procure sleep, and to repeat the pil. hydr. at night.

I need not pursue the detail farther. She gradually, but slowly, regained her former health, and her friends inform me, that she is now quite



free from ailment. Not a particle of discoloured matter passed from the intestines from the moment in which the turpentine was first injected; although up to that moment the fluid *nigricantis piceæ coloris*, and *tetri atræ coloris*, as Hoffmann terms it, passed away almost continually.

You will, I am sure, feel pleasure in receiving this account of the successful termination of an affection which Hoffmann calls, *truculentus et ad sanandum difficillimus*.

Believe me yours, &c.

WHITLOCK NICHOLL.

LUDLOW, Sept. 12, 1820.

A CASE OF  
**RUPTURED VAGINA,**  
WHICH TERMINATED FAVOURABLY,  
NOTWITHSTANDING THE  
STRANGULATION AND SUBSEQUENT SLOUGHING  
OF A CONSIDERABLE PORTION OF THE INTESTINAL CANAL.

BY THOMAS M<sup>c</sup> KEEVER, M. D.

ASSISTANT TO THE DUBLIN LYING-IN HOSPITAL.

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*Read by Doctor Reid, 2nd October, 1820.*

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THE following very singular case of ruptured vagina is respectfully submitted to the attention of the Medical Association. Its publication, I am aware, is not likely to prove of much practical utility; it affords, however, a striking instance of the extraordinary efforts which nature will at times make for the continuance of life; and as I have reason to believe that a well authenticated instance of recovery, under similar circumstances, is not on record, I trust an account of it will be



found deserving of insertion, in the ensuing volume of the Transactions of the Association.

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Mary M. æt. 26, a robust, healthy looking woman, was taken in labour of her second child,\* about six p. m. on the evening of the 29th of July last, when she sent for the assistance of a neighbouring midwife. Her pains at first were trifling, and recurred at distant intervals; towards morning, however, they became more severe, and returned with greater regularity, when her attendant, with the hope of bringing matters to a speedy termination, prematurely ruptured the membranes. On the following day, however, finding that she made but little progress, notwithstanding the great frequency and severity of her pains, she became alarmed for her safety, and called for further assistance. A medical gentleman was accordingly sent for, who finding on examination, that the head remained high up, and that the external parts were not well dilated, recommended her to wait patiently the further effects of her pains, directing, at the same time, a dose of castor oil to be given immediately, to be followed by an injection in four hours. The midwife was instructed

\* Several years have elapsed since she had her first child, of which I understand she was delivered by the crotchet, after having been three days in severe labour.

to watch the progress of her labour, but with as little manual interference as possible, and to be guided by circumstances in again sending for assistance.

During the entire of this day (the 30th,) her labour pains continued extremely violent, and without any perceptible remission ; she vomited frequently, and complained at times of excruciating pain in the small of her back. Towards evening, however, her pains began to decline, and as she became very restless and unmanageable, her medical attendant was again summoned to see her. On his arrival (which was not for a considerable time, in consequence of the very great distance at which he resided) he found that the labour pains had ceased for some hours : she had a quick, feeble pulse ; her stomach rejected every thing, and she complained much of languor and sickness. On repeating his examination, he found that little or no advance had been made in his absence, the head still remaining high up in the pelvis ; the external parts were, however, somewhat better dilated, and as her situation was obviously one that called for immediate assistance, he determined on perforating the cranium, and terminating the delivery by the crotchet. This operation occupied fully two hours, and was ultimately accomplished with extreme difficulty, in part owing to the very large size of the child's head, but



principally to a deficiency of room in the cavity of the pelvis. During the entire time she was exceedingly impatient and unmanageable, requiring the assistance of several women to keep her down in bed: this latter circumstance must, of course, have also contributed to retard the delivery. As she was a good deal exhausted by the operation, an anodyne draught was directed to be given without delay, and a purgative medicine on the following morning. Strict orders were given that she should be kept as cool and as quiet as possible, and that none but the lightest and mildest drinks should be given her.

During this night I understand she made little or no complaint, except of general weakness; she had several hours refreshing sleep, and appeared to be going on in every respect as well as could be desired. On the following morning, however, while one of her attendants was engaged in adjusting her bed, she observed a substance about six inches in length, and of a smooth, shining appearance, hanging from the external passages, but supposing that it was merely a portion of the membranes which had remained after the removal of the placenta, she contented herself with passing a portion of rag through the *loop* which it had formed in its descent, hoping that in a few hours the efforts of nature would be sufficient for its

removal. The purgative medicine which she took according to directions, occasioned considerable griping pains, but had no effect whatever in procuring passage from her bowels.

Tuesday, August the 1st, she made no complaint, unless of great soreness of the external parts; she had no vomiting or sickness of stomach, nor could I learn that she had any pain or tenderness whatever of the abdomen. Her bowels however, notwithstanding the free and repeated use of purgative medicines, continued obstinately costive from the time of delivery.

Wednesday, August the 2nd. The attention of the people about her was this day again directed to the portion of membrane (as they conceived it) which had made its appearance after delivery, and as they became a good deal uneasy at its not having come away, one of them determined on making some efforts for its removal. The gentlest and most cautious means were at first employed for this purpose, but not finding that they were likely to be attended with success, she incautiously pulled with increasing force, until at length the cries and entreaties of the unfortunate sufferer obliged her to desist. From this moment a train of the most formidable symptoms set in, her abdomen swelled up, and became excessively painful, she had incessant vomiting, with occasional hiccup,



and she complained much of pain which she describes of a dragging, lacerating kind, in both iliac regions. In this state she continued, with but little variation of symptoms, until the Friday following, when I saw her for the first time. It would be difficult to conceive a more melancholy or distressing picture of human misery than she at this time presented; her belly was much swoln, and excessively painful, so much so that she could scarce bear the pressure of the bed-clothes: her stomach rejected even the mildest articles of diet; bowels obstinately costive; pulse small, intermitting, and tremulous; countenance pale, and extremely anxious: in short she had every appearance as if a few hours, at furthest, would put a period to her sufferings. On raising the bed-clothes for the purpose of examining the precise state of matters, I found, in place of the alleged portion of membrane, near a yard and a half of her bowels coiled up under her, black and, to all appearance, putrid; exhaling a shockingly offensive odour. The cylinder of the intestine was in many parts so incomplete that the finger could be freely passed up and down through the rents: -

In this very deplorable state of affairs it is hardly necessary to say, that my prognosis of this poor woman's case was of the most alarming

nature. To attempt any thing like reduction,\* under the present circumstances, would, I conceive, be not only impracticable, (owing to the exquisitely tender state of the passage,) but absolutely injurious, by destroying the only chance which I conceived she had of prolonged existence, that of having an artificial anus established in the vagina. In fact it appeared to me that, except

\* Gardien, the latest and most distinguished of the systematic French writers on midwifery, makes the following remarks on this melancholy and embarrassing combination of circumstances :

“ Si cet accident arrive plus tard, la femme est perdue sans ressource si on ne peut plus porter la main dans la matrice pour réduire les intestins, dans le cas où les accidens qui seroient survenus dépendroient réellement de quelque portion d'intestins qui auroit pénétré dans la cavité de ce viscère. Pour pratiquer l'opération de Pigrai, conesillée par M. Baudelocque, si l'abdomen n'est pas encore ouvert, il faudroit reconnoître, l'existence d'un étranglement d'intestin ; or, nous n'avons point de signes pour le reconnoître, comme l'observe M. Sabatier. Les hoquets, les nausées, les vomissemens qui surviendroient peuvent tenir uniquement à une fièvre puerpérale, ou inflammation du péritoine, à laquelle les diverses circonstances qui accompagnent la rupture de la matrice donnent souvent lieu : presque toujours les symptômes qui surviennent sont ceux d'une péritonite.

Le seul cas où il seroit rationnel de pratiquer la gastrotomie pour dégager les anses d'intestins étranglées, comme le conseil-loit Pigrai, seroit celui où, après avoir porté la main dans la matrice et avoir reconnu le présence des intestins dans ce viscère, on ne pourroit pas réussir à les réduire par cette voie.”  
—*Vide* GARDIEN *Traité complet D'accouchemens, Tome III.*  
p. 107.



in the way of palliating distressing symptoms, little or nothing could be done, and, in this view of her case, I was confirmed by the superior judgment of Doctor Labatt, the present master of the Lying-in Hospital. The common saline mixture, with small doses of tinct. of opium, was accordingly ordered, with the view of relieving the extremely irritable state of her stomach; and she was directed to take *cold* chicken broth for her ordinary drink. A pill, consisting of three grains of calomel and half a grain of opium, was also directed to be taken every four hours. The abdomen was ordered to be well stuped, and she was allowed a little wine occasionally.

Saturday, August the 5th, I made the following report:—The abdomen is still greatly swelled, but she bears pressure with greater freedom; vomiting, with hiccup, have continued almost incessant since last visit; bowels obstinately costive; extremities cold; face collapsed, and covered with cold sweat. The protruded portion of intestine has a soft, doughy feel; is more shrivelled, and instead of being black, as when first I saw it, is now of a dirty ash colour.

The remedies already ordered were directed to be continued, and in addition she was allowed, at her own earnest desire, a table-spoon full of barm occasionally.

August the 7th. As I was in daily, I might say hourly expectation of hearing of this poor woman's dissolution, it afforded me no small gratification and surprise to find, on visiting her this day, that the mortified portion of intestine\* had come away in the course of the preceding night, and that she has since been nearly altogether free from distressing symptoms. The vomiting and hiccup have ceased; her pulse is regular, and of good strength; abdomen still swelled, but less tender; countenance improved; extremities of a natural temperature. About an hour after the mortified piece of intestine came away she had a copious discharge of *fæces per vaginam*, being the first alvine evacuation she had since delivery. The pills and cold chicken broth were directed to be continued, and her attendant was instructed to syringe the vagina repeatedly with a decoction of chamomile flowers.

Friday, August 11th. Has been mending daily since last report; the tension and soreness of the abdomen are still further diminished, and the *mammæ* are now distended with milk; pulse natural; tongue clean; expresses a desire for food. Her stools continue to come *per vaginam*, and she now, for the first time, complains of involun-

\* It measures precisely three feet eleven inches, and is at present in my possession: the members of the Medical Association had an opportunity of examining it when I first gave notice of this remarkable case.



tary discharge of urine. As the very tender state of the passages precluded the possibility of ascertaining the condition of the bladder, by means of the catheter, she was merely directed to wear a T bandage, with a large soft sponge to the external parts, for the purpose of absorbing the discharges. A pint of porter, with a small quantity of wine, was allowed daily; and a mild, nourishing diet, consisting for the most part of eggs, beef tea, and milk, was recommended.

September 4th.—Abdomen still swelled and tender, particularly over the pubis, and in both iliac regions:—countenance improved; has an abundant secretion of milk, and is gaining strength daily; appetite good; she is able, however, to take but a very small portion of food at a time, and in about an hour after her meals she again feels a return of hunger: fæces and urine continue to be discharged involuntarily *per vaginam*: the stools are of a bright yellow colour, of fluid consistence, and are altogether free from fæcal odour.

From the date of this report she continued to mend, with but little interruption, until the 12th, when her father called on me, in a state of great agitation, at an early hour in the morning, to say that she had passed a very bad night, in consequence of excruciating pains of her belly, and

that another portion of her bowels (as he was given to understand) had made its appearance. Being obliged to go a few miles from town, I was unable to see her until late in the afternoon, when I found that all the alarming symptoms had subsided, and that a piece of membrane thickly studded with sandy matter, about nine inches in length and four in breadth, had come away. After this became detached she got immediate relief, and she has since continued as free from ailment as can well be expected, considering the loathsome and afflicting infirmities under which she labours.

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ABOUT a week after the above report was drawn up, this poor woman, through the indulgence of Doctor Labatt, was accommodated with a bed for a few nights in the recovery ward of the Lying-in Hospital, where she was seen by several eminent professional gentlemen. She was at that time able to sit, and walk about, without the slightest pain or uneasiness, and was rapidly improving in health and strength.

LYING-IN HOSPITAL, }  
October 2nd, 1820. }



A CASE  
OF  
DISEASED HEART,  
IN A PATIENT WHO HAD SUFFERED SEVERELY FROM  
ACUTE RHEUMATISM.

BY DANIEL FALLOON, M. D.

LICENTIATE OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND.

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THE subject of this case became my patient on the 11th of January, 1819, and I obtained from him the following history of himself:—That he was about 43 years of age, by trade a surgeon's instrument maker, of very industrious and regular habits at all times ; and since he got married, and had a family, was extremely anxious about their welfare, and had an ambition to make them appear as decent as possible in the world. To attain these ends he was much in the habit of working at his business till one or two o'clock in the

morning. His present complaint, he supposed, began above two years ago. Although he had been very active and strong, he had suffered from two severe attacks of acute rheumatism, the former about ten years ago, the latter about five ; and in this, he told me, he had been jaundiced. His present complaint crept on him very slowly, and for the first year did not incapacitate him for work. At first it did not engage much of his attention ; he was more surprised than alarmed upon finding that any increased action, such as running up stairs, occasioned palpitation and breathlessness.—These continued gradually to increase, until at length he became dropsical.

Except in his first rheumatic attack, he has always been attended by surgeons, who, as far as I could learn from him, treated him generally with mercury, often pushed to salivation ; blisters frequently applied ; and at length a seton, which had been established over the region of the heart, was kept open for a year. He was in the habit of taking purgative pills, and draughts of infusion of valerian, ether and laudanum. From all these he obtained only temporary relief. A few days before I saw him he had obtained further advice, and the practitioner, after a very minute examination, told him that he laboured under a disease of the heart, and in his present condition nothing could be done for him, for the disease had now ar-



rived to that degree that he might die at any moment.

Under these circumstances he fell into my hands, when I took the following notes of his case :—He had not been in bed for the last three weeks, being unable to bear the recumbent posture from the violent action of the heart, and a feeling of impending suffocation. His slumbers were short and broken, attended with frightful dreams, from which he started as if terrified and fatigued. He was universally dropsical, and so large that his ordinary clothes would not meet on him ; his face also swoln and puffed, but not livid. The whole arterial action so strong as to shake him in his chair ; motion of the heart widely diffused over the chest ; action of the carotids most violent. He complained much of a “ croaking noise,” occasionally very violent at the upper part of the sternum. Pulse very irregular, occasionally pausing, then fluttering ; it would then give two or three very strong beats in tolerably equal time, and again proceed in the same irregular and fluttering manner. The action of the heart was observed to proceed in the same irregular manner. He was much harrassed with cough ; breathing oppressed, but the inspirations could be made deep ; appetite not very bad, but he was always worse after eating ; bowels kept open by the pills ; urine very scanty and high-coloured.

Among this catalogue of alarming symptoms there were some so prominent as to leave but little doubt as to the true nature of the disease, and so guiding, that, hopeless as it seemed, I conceived the possibility of still relieving him. At my first visit I contented myself with ordering an electuary chiefly composed of cryst. tartar. and pul. jallap. to be taken in such doses as I supposed would insure the free evacuation of the bowels by the next day. I told him I should then have my mind made up as to my further mode of proceeding, submitting to him also whether he would follow me in whatever plans I might adopt. On the next day, when I told him that I was determined to adopt the only plan which, in my judgment, was calculated to afford him any relief, and that I did entertain a confident hope that his sufferings would be alleviated, and that his life, whether long or short, would become more supportable, he was evidently cheered even by this prospect, and gave me full permission to adopt whatever measures I thought proper, assuring me that he would most scrupulously follow all my directions.

I immediately directed twelve ounces of blood to be drawn from a small orifice, the electuary to be continued, and his food to consist chiefly of weak chicken broth in small quantities, with a little stale bread or toast. On the following day



I found he bore the bleeding without the least inconvenience. The crassamentum of the blood was almost globular, presenting a surface of little more than half an inch in diameter, covered with a very tenacious, leather-like, buffy coat; the serum not in unnatural quantity, of a whey colour; action of the heart and carotids as before. In no respect was he worse, he even thought himself a "little lighter;" bowels freely opened.

I bled him to the same amount for four successive days, all of which he bore without any inconvenience, and the blood continued to present the same appearances. After the third bleeding the urine became a little more copious, and the following day the œdema began to diminish in the legs, which became softer; the pulse somewhat more regular and steady; and the action of the heart, although very much diffused, was a little less violent; cough easier and less of the croaking noise. He got imperial for drink.

The report of the 16th is, that after the bleeding of yesterday, which he bore as usual, he felt so much relieved that he got something like natural sleep for the first time on the bed. Face less puffed; œdema every where begins to diminish; urine very much increased, bowels act freely; I added spt. ether nitros. to his imperial,

and omitted the bleeding on this night. I repeated the bleeding on the 17th, and, in about an hour after the blood was drawn, he was so much relieved, that he went to bed and enjoyed some sleep, but always awoke as if frightened. All his symptoms were much relieved.

From this time I kept him in as quiescent a state as possible, not even suffering him to leave his bed for any purpose whatever ; treating him chiefly with purgatives and diuretics combined, which he used in very large quantities ; I found that cal. dried squill, digitalis, and opium, combined in various proportions, according to symptoms, served him very essentially. His pulse became comparatively steady, and sometimes so slow as 58 beats in a minute ; and the irregularity in it was more a duplication in the beat, than an intermission, although both were often observable: the pulses every where were always found synchronous with the heart's action. Various symptoms and feelings would appear from time to time, the most constant of which were the "croaking noise," his drink, when swallowing, would appear to make a noise as if "falling into an empty jar;" buzzing in his head, and ringing in his ears. When these last symptoms would not yield to the ordinary means, I controlled them from time to time by blood-letting, always conducted in the same cautious way, and from a small orifice. His



stomach pretty frequently got out of order, a matter of no surprise to me from the great quantity of medicine necessary to promote the alvine and urinary secretions, for when these were not abundant he always became worse.

For the space of five weeks he never left his bed, during which time it is not to be understood that his improvement was uniformly progressive, yet the cause of the fluctuations was not always manifest. But very frequently he was so tranquil, and enjoyed such comfortable and refreshing sleep, that he thought himself restored to perfect health. His pulse was very constantly perfectly regular at about 60, and the irregularities in it were much more frequently double beats than intermissions. The action of the heart, however, remained equally diffused, and that of the carotids still very violent. In the beginning of March he was so far recovered that he could with ease and comfort walk about his room; his swellings at this time being all removed, not even his ankles exhibiting any oedema. I may give a sketch of many months by saying, that he was kept under the constant and daily use of such purgatives as would promote watery discharges, changing them for, or assisting them with others of the opposite class, as occasion might require; the constant use of diuretics was no less necessary, of which he used a great variety; among these, acet. kali and

tinct. digitalis were very generally found useful. The diet always such as might be supposed the least likely to generate blood.

Notwithstanding the most diligent perseverance in such remedial measures, his distressing symptoms, such as have been already recorded, would very frequently re-appear; and although the cause of this was not always very clear, they did on one occasion seem to be produced by his driving out slowly, at his own request, in the month of April. The use of the lancet was always absolutely necessary to subdue these symptoms and restore tranquillity; on three or four occasions, the timely arrival of a profuse epistaxis anticipated the necessity of the lancet. I observed that the discharges of blood took place from each nostril, but rather more frequently from the left, and that it did not flow profusely, but drop by drop, continuing for a length of time; on one occasion for almost an entire day, always relieving the heart's struggle, and the tightness across his chest, causing the œdema to disappear, and mitigating all his distress.

In the beginning of June I sent him to the suburbs, and for the remainder of the summer months he had comparative enjoyment, being able to walk slowly abroad occasionally, without much



inconvenience. Even here he suffered the occasional, but less frequent interruptions to his ease.

Blistering was tried now and again, but could not be long continued from the great irritation produced by the attempt to keep up the discharge, and the consequent acceleration of the pulse, attended by such distress as more than counterbalanced whatever advantage might be otherwise expected from such application. The seton, he told me, produced similar effects. His legs and thighs were kept constantly bandaged, as well to afford strength as to control the œdema.

On the 26th of August he drove in from the country to see me, when he had no œdema; very little cough; sleep pretty good, and the dreams less frequent and frightful; pulse 80, almost regular, and the heart somewhat quieter; he continues to gather flesh, and his strength is improved. In this state he remained until the beginning of October, when a change for the worse seemed to manifest itself. An abstract of a few of the reports about this time will serve to mark as well the suddenness, as the nature of his symptoms.

October 4, In all outward respects, as before; tongue perfectly clean; pulse 86, almost regular;

heart tolerably quiet. He said ease agreed best with him, as exertion caused a catch about his heart. Four or five watery stools daily; urine copious, and of natural colour.

9th, He told me that on the 5th inst. he was seized with pain in the region of the heart, the organ felt as if tied, and his breath became short, and cough harassing; restless nights and much confused dreaming. These symptoms increased until the 8th, on which night he was so distressed that he thought he could not live until morning. R. V. S. ad  $\frac{3}{4}$  xvj.—xx. e parvo orificio cont. remedia cæt.

10th, The full amount of twenty ounces drawn, which he bore as usual, without the least weakness. The blood was so cupped that it formed a ball, and was buffed with a very thick, tenacious coat; serum rather above the natural quantity, and straw-coloured. He got some relief in about two hours after he was bled, and spent a quieter night; still, however, he dreamed much, and was frequently obliged to start from bed to recover breath; bowels and urine said to be more free, and the puffiness of the face has subsided since the bleeding; pulse 86, strong and bounding, but not very irregular, the pulsation very diffused in the thoracic region, and the action of the



carotids very violent ; breathing tolerably quiet.  
℞ V. S. ad  $\frac{3}{4}$  xij.—xvj. e parvo orificio. cont. cæt.

11th, The full amount of  $\frac{3}{4}$  xvj. drawn without any weakness ; the crassamentum in all the cups, as usual, almost quite rotund, with a small circular buffy coat on the top ; the buff on the last cup is thicker than that on the others. The relief was decided and remarkable ; he slept well without dreaming, and is hungry this morning. Pulse 80, still very strong, but perfectly regular. Cont. remedia.

15th, On the 13th the breathing began to become again difficult, and the nights spent in frightful dreaming, and the terrors of each night increased, so that the last was the worst. Face a little puffed ; feels some tightness in the region of the heart, and when he starts from his short slumbers that organ feels sore. The gurgling noise at the upper part of the sternum has been almost constant, and very troublesome. Heart regular in action, very diffuse and strong. Pulse 90, regular and strong, not compressible.—℞ V. S. ad  $\frac{3}{4}$  xij.—xvj.

16th, Blood drawn to the full amount ordered, without the least weakness, and it presents the same appearances as before described. Breathing become freer ; chest more open, and the sense of

tightness across the chest pretty well gone. He got some good sleep, and awoke tranquillized; very little œdema of feet; face more natural; pulse regular and strong, not compressible. Heart quieter, and the gurgling noise less.

20th, The breathlessness and gurgling noise have been gradually increasing since last report, and last night were particularly distressing, so that he could not lie down. He complains of tightness across the lower part of the thorax. Pulse 100 full, strong and regular, and the action of the carotids more violent than usual. Some epistaxis yesterday.—*R. V. S. ad 3 xij.—xvi. e parvo orificio, more solito. Rept. cæt. remedia.*

21st, Above 3 xvi. were drawn in three separate cups, and the appearances usually denoting strong arterial action, and the inflammatory diathesis were much less striking now than at any former period. He felt low about an hour after the blood was drawn, but some ether soon revived him. The relief was not sudden nor remarkable, yet he got gradually better, and slept with comparative ease. Face more natural, and the feet much less œdematous than yesterday. Pulse 88, more expanded and tranquil, and the action of the heart and carotids correspondently easy. The tightness across his chest is gone, and in every way he is sensible of relief. He spent, however, a



bad night from dyspnœa, and his stomach began to reject every thing.

23rd, On this day I found the œdema had re-appeared in the feet, legs, thighs, arms, and face. He had been seized with a violent pain on both sides of the neck, chiefly on the left, in the tract of the carotids, extending from the chest to the ear, under which it was most violent. Pulse regular, strong and full, at about 109. The chief seat of his distress he refers to the region of the diaphragm. Tongue of a pale, whitish appearance; lips pale; his breath feels cold to him, and his hands and feet have become cold. All the secretions have become diminished. Terebinthinate injections, as often before, were directed, and an attempt was made to allay the great irritation of the stomach by saline draughts made with the *inf. menth. comp. and tinct. opii*.

25th, His stomach continued to reject every thing, and the œdema was increased. The pit of the stomach was very sore, and pressure there caused vomiting. Pulse 105, weaker; lips not so pale. Eight leeches were immediately applied to the epigastric region.

26th, All the leeches fastened, and the orifices bled the greater part of the night. The epigastric pain is gone, and the stomach much more settled.

Cold water was very grateful to him, and remained best on his stomach. Bowels have acted freely without the injections, and the urine is much more abundant in the last twenty-four hours than for several days before. Pulse more developed, and stronger, at about 100; lips redder; œdema less.

27th, Spent a quieter night; œdema has disappeared on the arms and face. The action of the heart much less, but is increased, as before, by the least motion, and the breathing becomes laborious. Pulse 104, more steady than yesterday; no cough; lips more of a natural colour; feet have been warm without artificial heat; stomach again squeamish. Let him have, as before, green tea—cont. cæt.

28th, Had three or four fits of weakness during the night, from which hartshorn roused him. An injection brought away much fæces; urine scanty; œdema increased; is in every way much weaker; eyes have something of a stare; complains much of oppression about the region of the heart, and he moans occasionally; pulse 90, regular, but weaker, yet in another would be of sufficient strength; action of the heart diminished, but that of the carotids still very perceptible; the least motion causes dyspnœa; no return of any pain in the carotids, nor any cough; feet and surface



naturally warm ; raved some in the night ; now quite collected ; vomited occasionally ; took very little tea, as cold water is most grateful to him ; is inclined to doze much ; inspirations are regular and deep ; expirations forcible ; he objects to have a blister applied to the epigastric region. ℞ Aq. menth. viridis, ℥ viij. sulph. mag. ℥ i. carb. mag. ℥ iiss. acet. colchici. ℥ vi. tinct. opii. gtt. xxx. m. capt. unciam 3 iis. horis.—Cont. cæt.

Having spent a very anxious and restless night, he expired on the morning of the 29th, about 7 o'clock. The body was examined the following day about half past 10 o'clock, P. M.

### *Dissection.*

EXTERNAL appearances.—Œdema of feet and legs much less than before death ; face sunk ; surface of body not unnaturally pale, ecchymosis nowhere except on the back ; the left side of the thorax, as during life, more prominent than the right.

Internal appearances.—The lungs on both sides adhered to the pericardium, requiring force to detach them so as to expose the root of the lungs : these organs healthy, except some slight adhesions to the parietes of the thorax on the left side ; none on the right ; some fluid in each cavity ; in both not exceeding a pint. The heart ad-

herent to the pericardium, and requiring much force to detach it; the two surfaces of the serous membrane, viz. that lining the fibrous pericardium, and that immediately investing the heart itself, had coalesced on the whole extent of the heart, except on that portion of the organ which rests on the diaphragm, here there were no adhesions whatever, nor any fluid unnaturally effused. The heart and great vessels fully exposed; the former appeared to be about three times its natural size, and all the great vessels were very much dilated, but not thinner than natural; the left ventricle much thicker in the parietes than natural; all the valves sound, except one of the aorta, the free edge of which was much elongated, thickened, and beset with warty excrescences containing earthy matter, in such a soft state as to yield to slight pressure between the fingers. The lengthening of the free edge of the valve was such that it must have flapped up and down between the artery and ventricle during the contraction and relaxation of the latter; the auricles were proportionably dilated as the ventricles. The heart, freed of its appendages, (except about an inch of the aorta and pulmonary artery,) washed and dried, weighed 34 ounces; traces of sub-acute inflammation observable on the surface of the pericardium. Liver smaller than natural, and of a dull brick-colour; no tubercles nor unnatural hardness. Stomach felt a little thicker than natural, and the



vessels on the mucous surface appeared in a state of congestion. Spleen increased somewhat in size, but in other respects healthy. The rest of the viscera sound, and no fluid effused in the abdomen.

This dissection was very accurately performed by the valuable assistance of Surgeon Adams, in the presence of my friends, Doctors Leahy and Grattan; the former of whom, as soon as he saw the body, observed, that many years ago he attended that man in one of the worst cases of rheumatic fever he ever saw; that all the large joints were highly inflamed, and the severity of the pains intolerable. He had occasion to bleed him several times, and his complete recovery was very slow.

Pathology, of late years, has been much promoted by those who have observed and recorded the metastases of diseases; whether the foregoing case deserves to be ranked among the instances of such translated diseases, I confess I have some doubt; the length of time, nearly two years, that elapsed before the patient observed any deviation from health, seems to me to present a difficulty. He might be mistaken in this, and indeed he told me so—whether or not, it is of practical importance, as it tends to shew what relief may be afforded in such cases, even under very desperate

circumstances, to the pitiable sufferer. When the causes and nature of such diseases are more generally understood, practitioners will be more ready to lend their aid in arresting their progress, or at least mitigating their symptoms. The extreme violence of the arterial action at once suggested to me the necessity of abstracting blood, and the appearances of it when drawn encouraged me to proceed. These appearances being, in so many respects, but in a more intense form, so similar to those found in blood drawn from pregnant women, in whom the growth of parts is manifest, might strengthen the conclusion that a similar process was going on here. Had this idea been acted on from the beginning, and persevered in throughout the whole of the treatment, it is hard to say how far the disease might have been arrested or impeded ; perhaps a valuable life been longer spared ;—certain it is, that the organ did not all at once grow to its enormous size. That condition of the blood which appears to favour depositions of flesh and coagulable lymph, as it is called, appeared in this case very remarkable ; for, notwithstanding the continued depletion by the constant and daily use of purgatives and diuretics, combined with the undeviating use of an anti-sanguific diet, this state of the blood very frequently returned, and the growth of parts seemed to be resumed ; so that as soon as the blood seemed to have acquired sufficient



strength, the process began. At the various times that the lancet was used, the blood uniformly presented the same appearances, except on the very last occasion, when I thought myself no longer warranted to pursue that mode of depletion. It is worthy of remarking how much advantage was gained by leeching, under some apparently contra-indicating symptoms. The stomach was very constantly, throughout the treatment, much disordered, and it was owing to its having lost the powers of retention and assimilation, that the fatal catastrophe was hastened. It appeared, in some degree, to have participated in the morbid growth.

A CASE OF RECOVERY  
FROM THE EFFECTS OF  
**CORROSIVE SUBLIMATE.**

BY CHARLES LENDRICK, M. B. M. R. I. A.

LICENTIATE OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND.

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*Read by Doctor Reid, 16th November, 1820.*

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ON Monday morning, 24th July, 1820, I was called to meet Mr. Buchanan, Licentiate of the Royal College of Surgeons, in the case of Mr. Edward Byrne of Nassau-street, whom I found labouring under the alarming symptoms usually following the exhibition of mineral poisons. His sufferings were extreme; he was retching violently; complained of intolerable heat and pain extending through the œsophagus to the stomach: his expression was, that "he felt all on fire." An emetic had been administered, but although vomiting had been produced, (whether from its action, or that of the poison, is uncertain,) no relief was obtained; he was extremely



weak ; his extremities cold, and covered with a clammy sweat ; the pulse quick, feeble, and intermitting.

He had for some time been in the habit of using a mixture composed of the compound infusion of gentian and tincture of bark, for a dyspeptic affection : on this morning however, immediately after taking his usual dose, he was attacked with the violent symptoms already mentioned, and on sending the medicine to his apothecary, the latter declared that it had been altered from the state in which it was sent from his shop. Undissolved crystals were observable at the bottom of the bottle, and the peculiar acrid taste left but little doubt that it contained corrosive sublimate.

In the mean time the patient's situation became rapidly worse. As no good effect had followed the exhibition of the emetic, we were not inclined to repeat it, and resolved to try the effects of albumen, as recommended by M. Orfila.

The whites of several eggs were, therefore, beaten up with about an equal quantity of water, and directed to be taken in as large quantities as the stomach could bear without painful distention. We agreed to visit him individually in the course of the day, and to meet again in the evening.

Nine o'clock, P. M. The alarming symptoms had diminished after the first exhibition of the eggs, and almost entirely subsided subsequently to the others; he is now nearly free from pain; his pulse is firmer, and he is stronger in every respect; he complains of soreness of the throat, but says that the inconvenience is very trifling; he wishes much for sleep.

25th, Slept tolerably well, but is weaker than yesterday evening; pain in the bowels; abdomen tender to the touch; pulse quick, but not full.

Habeat haustum ex oleo ricini cum aq. menthæ pip: et applicentur duodecim hirudines (si opus sit) regioni abdominis, cum fotu aquæ ferventis.

Evening. The bowels freely opened by the draught: the application of the leeches had been unnecessary, as the unpleasant symptoms subsided after the action of the castor oil and the use of the fomentations.

From this time his recovery was progressive: symptoms resembling periostitis occurred over each tibia about the tenth day, and it was proposed to make an incision: as, however, he was now sufficiently recovered to attend to his ordinary avocations, this intention was relinquished, and the use of the warm bath proved sufficiently effectual.



a slight degree of paralysis of the right side, with nervous irritability in other respects, attended with some loss of memory, supervened, and from these complaints he is not yet free.

The remaining contents of the bottle from which he had taken the medicine were subjected to analysis by lime water, ammonia, and the galvanic circle of gold and zinc;\* the results confirmed our opinion as to the nature of the poison, the quantity swallowed of which must have exceeded half a drachm.

In this case the albumen was administered immediately after the usual corrosive effects of the poison had apparently commenced, and upon which the emetic did not appear to have any influence. The medicine was the emetic tartar, which was given before the nature of the poison was ascertained. In cases when corrosive sublimate has been taken, M. Orfila and many others think that vomiting is best promoted by diluent liquids, and of these the whites of eggs mixed with water is certainly the best. In the above instance, this remedy appeared not only to suspend the further action of the poison, but also to remove the symp-

\* See Accum's Chemical Tests, 3rd Edition, page 302.

toms which had already developed themselves. After gentle vomiting, the retching, heat, and pain, gradually subsided.

Mr. Brodie is of opinion, from a number of experiments, that the oxymuriate of mercury acts primarily, by corroding the coats of the stomach ; and secondarily, by the sympathy of that organ with the heart and brain; in consequence, after the immediate symptoms are apparently subdued, coma, with diminution of the vital powers, and death, frequently supervene ; and where the appearances of inflammation have been slight, or none at all. This I knew to happen in a case under my own observation, and depletory measures were therefore used with caution in the instance I have been detailing, and the result gave us no reason to repent of it.

Mrs. Byrne, wife to the patient, and her son by a former marriage, a boy about fifteen years of age, were indicted at the ensuing Commission for the city of Dublin, on the 3rd of November :\*— First, for “ putting a quarter of an ounce of corrosive sublimate into Edward Byrne’s medicine, with felonious intent ; and secondly, for a conspiracy to

\* For a detail of this interesting trial, see *Carrick’s Morning Post* for 7th November, 1820. I was unwilling to publish the above case till the circumstances were fully investigated.



kill and murder the said Edward Byrne." After a trial which lasted nearly the entire day, the son was found guilty on the first, and both mother and son on the second indictment, in consequence of which they received sentence of death on the following Monday.

DUBLIN, November, 1820.

# MEDICAL REPORT

OF THE

**Fever Hospital,**

CORK-STREET, DUBLIN,

FOR THE YEAR ENDING 4th JANUARY, 1819.

BY RICHARD GRATTAN, M. D.

FELLOW AND CENSOR OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS,  
&c. &c.

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THE Medical Reports of the Fever Hospital, Cork-street, since their general circulation through the medium of our Transactions, have excited considerable attention in every part of the empire, both from the great importance of the subject to which they relate, and in consequence of the interest which the profession and the public must naturally feel with regard to the practice and opinions adopted by the physicians connected



with so extensive an institution. Certainly nothing has contributed more to establish the character of the Fever Hospital than the publication of these reports, the opinions advanced in which, it is to be presumed, are derived by careful induction from numerous and well authenticated facts.

Even under the most favourable circumstances, and possessing the best possible opportunities for practical inquiries, no physician could acquire a competent knowledge of his profession within the limits of the longest life, were he to depend solely on his own observation, and refuse to be governed by any but his own experience. Medicine, however much it may have been improved, is still extremely imperfect, and in it, as well as in every other branch of knowledge, perfection is only to be attained by the united labours of many individuals of industry and talent, the exertions of each, though separately employed, yet leading ultimately to the same object. Hence the utility of detached facts and cases, and particularly of hospital reports. The latter, especially, would seem more likely to contribute to the advancement of medical science, from the extensive field presented to the practitioner, and the facility afforded to him of giving, in a condensed state, the result of his general experience.

Indeed, a sufficient knowledge of fever in its various forms, and of the mode of treatment best adapted for each variety, can only be acquired from enlarged experience, constant attention to the prevailing symptoms of the disease, and accurate observation of the changes which occur during its entire progress. For in fever, the symptoms are so varied, and occasionally present themselves with such irregularity, that inferences deduced from a few examples will almost always be found fallacious and inapplicable to the treatment of those cases in particular, which are the most urgent and attended with the greatest danger. The hospital physician, therefore, possesses great advantages, which give to his opinions a degree of authority not readily conceded to those of more limited practice. By having a number of cases under his inspection at the same time, he can compare them together, observe the effects of different kinds of treatment, and thus satisfy any existing doubt, or elucidate an obscure or dubious point. Besides, his patients are more immediately under his controul than they can be either in private or dispensary practice. In an hospital, the medicines directed by the physician must be administered, and no allowance is made, as is too often done in private practice, for the caprices of the patient, or the prejudices of those about him. The hospital practitioner having in view merely the recovery of his patient, directs



whatever treatment he considers necessary, and his directions are implicitly followed. He also decides as to the kind of diet, and the quantity of food proper for each patient, so that no sort of excess is permitted which might be supposed likely to interfere with the effects of the medicines prescribed. Thus he is enabled to form an exact estimate of the powers of remedies, and of the influence which each has exerted in shortening the duration of the disease, or in mitigating the violence of its symptoms.

Possessing these advantages, it becomes the duty of every physician, placed in a situation so ostensible, to institute such inquiries as are likely to promote the advancement of the science. Divesting himself altogether of prejudice, he should investigate the truth, and communicate such improvements as may have occurred to him ; or confiding in the rectitude of his intentions, fearlessly avow his errors, that others may derive the utmost benefit from his experience, and profit as well by his mistakes as by his suggestions. When medical reports are written in this spirit, and published more with a view to the general diffusion of knowledge than from a desire to assume extraordinary merit in the treatment of disease, they ought to be considered valuable, if executed even with moderate ability, as tending to establish on a surer basis the practice of a

profession in the improvement of which every individual is interested.

It is also reasonable that the public, who contribute to the support of hospitals, many of which are maintained at a great expense, should receive in return every possible advantage from establishments of this kind. The great end of public hospitals no doubt is to afford relief to the sufferings of individuals, and security to the community from the effects of contagious diseases; but though these are the principal, they are not the only objects of such institutions. They may be rendered subordinate to other purposes, and particularly to the advancement of medical knowledge. In many instances hospitals have been founded solely for this reason, and cases of disease have been anxiously sought for, and could scarcely be procured in numbers sufficient to allow of a full investigation of the subject. In those situations therefore, in which diseases abound, it is proper that an accurate account should be preserved of the circumstances which may be considered illustrative of their nature and progress; of their influence on the different orders of society; of their extent, causes, and manner of propagation; of their duration, fatality,—and lastly, of the medical treatment and other means which have been used to counteract their injurious effects.



Under the influence of such impressions, probably it was that the original subscribers to the Fever Hospital directed, “That it be an instruction to the Managing Committee to take special care that such a registry shall be kept of all their proceedings, whether within the walls of the House of Recovery or without, as shall enable them at all times to exhibit to the public a detailed view of their progress, and that it be a standing rule of the institution, that at the end of the year after the opening of the hospital, and at the end of every succeeding year, an account of the annual income and expenditure, and all other particulars of their progress, shall be printed for the public information.”

In compliance with the above original resolution, Annual Reports have been regularly published by the Committee, detailing the expenditure and domestic arrangements of the hospital, and by the physicians, recording the medical occurrences of the institution during each year. This plan, though it occasions some trouble in both departments, and is attended, of course, with expense, has however been productive of such decided advantage, that it has received the approbation of some of the medical journals of the first character in Great Britain, and the Reports have been proposed to other institutions as examples worthy of general imitation.

In the Medical Report for the year 1815, which was printed in the first volume of the Transactions of our College, I gave a general view of the principal occurrences that had taken place, either in the Hospital, or connected with it, from its foundation in 1802 to the end of the year to which the Report referred. Since that time three years have intervened, each affording matter of the utmost interest to the moral and political observer, as well as to the medical practitioner.

On the present occasion, although this Report strictly includes only the year 1818, yet I shall follow the plan which I first adopted, and in briefly adverting to a few of the more leading events of the two preceding years, endeavour to point out such facts as may enable us to form a tolerably accurate opinion respecting the origin and nature of the present alarming epidemic. In the Report for 1817, in consequence of the lateness of its publication, owing to the great pressure of business at the Hospital, Doctor Barker was enabled to include a part of the succeeding year, and he detailed with great exactness many of the occurrences which preceded and attended on the commencement of the epidemic. The observations which he has made on this subject have afforded me great assistance in drawing up the present Report, and I am anxious to have an opportunity of thus acknowledging the advantage



which I have derived from them. Into the medical practice of the Hospital I shall enter more fully than he has done in the Report alluded to, inasmuch as the principal object of that Report was to afford a history of events tending to produce and extend the fever which still prevails, and has afflicted this kingdom with so awful and dreadful a visitation.

Severe however as has been this calamity, and extensive as has been the mischief which it has produced, still its effects have been greatly mitigated, and much evil averted, which must inevitably have followed had it been permitted to pursue its course unresisted by active and judicious measures. Hospitals have been every where established, and from the great number of patients who have passed through them, and the excellence of the accommodation provided for their relief, opportunities have been afforded to physicians in every part of the kingdom for observing the nature of the disease, and ascertaining the treatment most successful in conducting it to a favourable issue.

Compared with other epidemics the mortality has been by no means equal to what might have been expected, and certainly much less than it would have been but for the great liberality of Government, and the active and unremitting ex-

ertions of individuals in affording accommodation and providing medical attendance for the poor, amongst whom it principally prevailed. It is extremely probable that the lesser mortality may also with justice be ascribed, in a great measure, to the more rational and correct views which are now generally entertained with respect to the management of febrile diseases,—a circumstance of extreme importance, and one which will render discussion on the subject, to a certain extent, both interesting and instructive, by contrasting the practice of the present day with that which formerly prevailed. On this subject also some diversity of opinion must be permitted to exist, and even ought to be encouraged, for by leading to inquiry, it tends to remove prejudice, and contributes to promote the more general diffusion of medical knowledge.

When fever hospitals were first established, it was supposed that through their agency contagious fever would be almost immediately arrested in its progress, and instead of spreading through families and whole districts with rapidity as formerly, terminate for the most part in the persons of those individuals whom it had first attacked. Subsequent experience, however, has proved that in this estimate of their utility their power has been much overrated, and that in every part of the empire contagious fever has prevailed



to a greater extent since their formation than at any former time within our recollection. This fact must convince us that their effect is merely palliative. The good of which they are productive is evidently considerable, but still it is to be recollected that they are altogether insufficient totally to eradicate the disease. However sanguine our expectations may have been at first, this must now be admitted; and certainly it is better candidly to acknowledge a partial failure, than to direct our entire exertions to maintain a system which it is obvious cannot ultimately insure success. Fortunate would it have been for this kingdom could fever hospitals have succeeded in accomplishing the object for which they were established, but as the case has been otherwise, we must naturally pause; we are called upon to reconsider the subject, and to inquire into the causes which have of late years been so productive of contagious fever. Has fever been more contagious of late than formerly? Is it always communicated by contagion, or may it arise from other sources more general and more extensive in their influence? Does it depend upon the state of the seasons, or upon any peculiar condition of society rendering individuals more susceptible of its effects? How far has its progress been prevented by the means already employed, and what measures yet remain to which we may have recourse with a prospect of further advantage?

Such are a few of the questions which obviously suggest themselves on a subject so closely connected with the public welfare. He knows little of the difficulty in which it is involved who expects, in his endeavour to arrive at the truth, to remove every doubt, and to enforce his opinions by arguments so convincing as to render further discussion superfluous. Probability is the utmost to which we can hope to attain, and even when our opinions are apparently the most correct, and our doctrines the most plausible, numerous facts will be found, for which it will be difficult to offer an explanation.

Although epidemic fever has at various periods visited these kingdoms, and occasioned great mortality on different occasions, still I believe our domestic history does not afford any instance of its having followed the same steady and long continued course which it has of late years pursued. Former epidemics, which immediately succeeded a period of famine, have prevailed for a year or two, and however great their malignity, or the mortality by which they were attended, they afterwards declined, and altogether disappeared, when the cause which had principally occasioned them was removed. This was the case we find in numerous instances, and more particularly in the epidemic of the years 1740 and 1741, which succeeded the intense frost of the winter of 39 and



40, and which occasioned such mortality that it is supposed 80,000 persons perished in Ireland alone. Had the same fever, thus widely diffused, and raging with such fury, continued to pursue its course like the present epidemic under every variety of season, and in years of plenty as well as of scarcity, the country must have long since been depopulated. The fever which at present prevails is not one of recent introduction; for with temporary fluctuations and occasional change of situation, it has continued to increase progressively during the last twenty years at least. It is not likely that a fever hospital would be established until the necessity of maintaining such an institution had first been strongly impressed upon the public mind, by the number of persons suffering from the disease, and the absolute want of having a suitable place to which they might be removed. Hence it would appear, that fever has existed to a considerable extent in the south of Ireland, at all events, since the year 1799. A destructive civil war had hardly terminated when a scarcity, approaching nearly to famine, visited our country, attended by a fever justly considered epidemic. Doctor Barker mentions in his Report, that in the years 1800 and 1801, he “recollects to have seen unfortunate patients in fever lying by the road sides, and that the fever hospital, then newly established in Waterford, was insufficient for the accommodation of all appli-

cants.”\* The hospital to which he alludes had been opened in Waterford in the summer of 1799 for the reception of fever patients. From the month of August to the end of December it received 146 patients. In the year 1800, 409, and in 1801 not less than 875 fever patients were admitted.

In 1801 fever was found to have increased in Dublin; and as no adequate hospital accommodation had been provided for the poor afflicted with fever, it was intimated by Government that they were anxious to assist in the establishment of an institution so much required, the exertions heretofore made for the relief of such persons at their own houses having in a great measure failed. This hospital, then the only Fever Hospital in Dublin, was calculated to contain 80 beds, and was opened in May 1804. Still, however, fever continued to spread, and it still became necessary to provide additional accommodation. Not only was the Fever Hospital enlarged, but new fever wards were constructed and successively opened, until in the year 1813, 262 fever beds were provided for the sick poor in the Fever Hospital, and House of Industry alone, independently of the fever cases occasionally received into other institutions.

\* Transactions, 2d vol. page 550.



From the opening of the Fever Hospital to the end of the year 1813, 14,087 patients passed through its wards. The number admitted into the Waterford Hospital up to the same period amounted to 4,583, and in the Hardwicke Fever Hospital, since the beginning of the year 1810, to 6,666, making in these three institutions alone a total of 25,336 patients. From these facts some estimate may be formed of the extent to which fever has prevailed in Ireland prior to what has been regarded as the commencement of the present epidemic; and it appears from them, that whatever may be considered the causes of epidemic fevers, these causes have been unceasingly exerted.

In the commencement of the year 1814 the weather was uncommonly severe all over the kingdom, and a great fall of snow took place, which in Dublin rendered the streets nearly impassable for three weeks. Provisions were at the same time extremely high, so that great and general distress was the consequence. In Dublin meetings were held to take into consideration the state of the poor; large sums of money were subscribed, soup-shops were opened, and more than 66,000 persons were relieved. Fever maintained the average of the two preceding years, a result scarcely to be hoped for under circumstances so adverse, and when a great increase was

reasonably to be expected. Every thing favourable was therefore anticipated. The return of peace, and the prospect of an abundant harvest, excited the most pleasing confidence that, with war and scarcity, their sad attendant, disease, would also disappear. The fallacy of such an expectation, however, soon became but too apparent. Peace, it is true, had returned, and the harvests of 1814 and 1815 proved more abundant than had ever been remembered ; but the sudden transition from a state of long protracted war to that of peace, so deranged the pursuits, and gave such a check to the affairs not only of the mercantile and manufacturing classes, but also of the landed proprietors, and of the agricultural interests, that the greatest distress followed. Corn became so cheap that it scarcely repaid the expense of cultivating it ; and cattle of every description were sold for less than their original cost. Thus, of the farmers and graziers many were ruined, and the remainder were obliged to contract their expenditure by dismissing from their service numerous labourers, to whom they had formerly given sufficient wages and regular employment. The rent-roll of the landlord was diminished in the same proportion, and from the same cause, for it became impossible to collect the usual rents from the impoverished tenantry of the kingdom ; and in a great number of instances the proprietors of large estates were compelled



to reduce their establishments, and to live with an economy which they had never before practised. Manufactures languished, trade decayed, all enterprise had ceased, and without employment the great mass of the poorer portion of the population were starving in the midst of plenty. Fever increased rapidly amongst them, and prevailed to such an extent, that at the end of the year 1815, and in consequence of its having continued without any diminution during 1814, there were received into Cork-street Hospital, in these two years, 6,185 patients; and 4,477 into the Hardwicke Hospital during the same time.

Not only were the harvests of these years extremely abundant, but the seasons also were favourable for gathering them in, so that the corn was well saved, and bread, and other sorts of provisions, were of excellent quality. The weather in general was as good as in former years, and no remarkable excess, either of heat or of moisture prevailed, which could lead to the supposition that the constitution of the atmosphere was unusually sickly. To ascribe the increase of fever to the latter cause, therefore, would evidently be altogether gratuitous, or on the other hand, to suppose that it was produced by bad food, would be contrary to what is well known to have been the fact.

In 1816 the weather was most unfavourable, and the harvest extremely unproductive. The spring was unusually late, and remarkably cold and wet, so that the crops were all planted long after the proper period, and even when there was little prospect of their producing a sufficient return. Great therefore was the distress and disappointment, when the summer and autumn proved equally unpropitious, for, from the incessant cold drizzling rain which prevailed, the greater part of the ill-ripened corn germinated in the fields before it could be reaped. Potatoes were bad and watery, and the wheat and oats were malted and innutritious.

In the spring of 1817 fever was observed to be on the increase in several towns, situated in very distant parts of the kingdom. It appeared about the same time in Newry and Cork, in which cities it was first perceived to exceed its ordinary average. By degrees it spread to other towns, and Waterford, Limerick, and Kilkenny, exhibited a great increase in the number of fever applicants. It was not until September that fever excited much alarm in Dublin, as the admissions until then rated nearly as usual, and were even under those of 1815.

It is probable that a more correct judgment as to the prevalence of fever, is to be formed from a



comparison of the number of applicants for admission, than from an estimate of those actually admitted; for it almost invariably happens, that those who apply are, or have been, ill of fever, while many of them are, from various causes, not afterwards removed to the Hospital. Sometimes the patient becomes convalescent before he can be sent for, or though still ill of fever, changes his mind, and refuses to allow himself to be removed, and very often the application is forwarded to the Hospital not by the patient or his friends, but by persons residing in the same house or neighbourhood, who conceive that they or their families may be exposed to considerable risk by suffering him to remain among them. In many instances this interference of strangers is rather ungraciously received, and I have known numbers who would probably have applied themselves to be removed, instantly refuse, with feelings of displeasure, on finding that application had already been made by others for that purpose. For these reasons the following table was calculated from the applications addressed to the Hospital, and not from the numbers actually received into it. It will enable us to form a comparison between the prevalence of fever in different and successive years.

| MONTHS.                 | YEARS. |      |      |      |      |       |        |
|-------------------------|--------|------|------|------|------|-------|--------|
| Applications.           | 1813   | 1814 | 1815 | 1816 | 1817 | 1818  | Total. |
| From Jan. 11 to Feb. 11 | 241    | 246  | 312  | 322  | 248  | 707   | 2076   |
| — Feb. 11 to March 11   | 215    | 174  | 327  | 302  | 195  | 670   | 1883   |
| — March 11 to April 11  | 250    | 192  | 357  | 283  | 294  | 653   | 2029   |
| — April 11 to May 11    | 219    | 209  | 424  | 319  | 341  | 664   | 2179   |
| — May 11 to June 11     | 286    | 204  | 477  | 332  | 400  | 788   | 2487   |
| — June 11 to July 11    | 301    | 204  | 493  | 303  | 339  | 798   | 2438   |
| — July 11 to August 11  | 308    | 226  | 522  | 239  | 326  | 1055  | 2676   |
| — Aug. 11 to Sept. 11   | 12     | 233  | 529  | 231  | 405  | 1202  | 2912   |
| — Sept. 11 to Oct. 11   | 360    | 282  | 519  | 227  | 449  | 1221  | 3038   |
| — Oct. 11 to Nov. 11    | 339    | 341  | 610  | 259  | 476  | 1344  | 3369   |
| — Nov. 11 to Dec. 11    | 277    | 376  | 541  | 263  | 564  | 1196  | 3217   |
| — Dec. 11 to Jan. 11    | 218    | 347  | 443  | 267  | 805  | 1096  | 3181   |
| Total                   | 3326   | 3034 | 5559 | 3347 | 4845 | 11394 | 31505  |

From this Table, and from the circumstance that the accommodation for fever patients in Dublin generally was not increased from the beginning of 1813, until the September of 1817, it is quite clear, that fever could not be said to have prevailed to any unusual extent until about that period. It then evidently spread, and new fever wards were opened in the House of Industry, which, notwithstanding, proved insufficient to meet the increasing demand. A letter was addressed by Mr. Peel, then Chief Secretary, to the



Committee, stating, that many applications had been made very recently to the Governors of the House of Industry, for admission into their fever hospital, and that he felt it desirable to take precautions against the consequence of an epidemic in Dublin. He was therefore anxious to ascertain, whether any additional accommodation for fever patients could be afforded by the Cork-street Hospital; and at the same time intimated, that the expense incurred by providing such accommodation would not be made a charge on the funds of the institution. Every effort of course was made to comply with the wishes of Government, and to co-operate with them in forming arrangements to meet the danger which threatened the city. In less than three weeks nearly 80 additional beds were provided, and an assurance given, that no exertion should be omitted to increase them, if necessary, to the utmost extent which the hospital could possibly accommodate. Still, however, these means, though resorted to thus early, and undertaken with an energy most creditable to those with whom they originated, were quite inadequate in point of extent. In proportion as additional accommodation was provided, in the same proportion, nearly, the demand for further exertions became more urgent. The situation of the poor still imperatively called for relief. The Governors of the House of Industry converted their chronic into fever wards, and the beds in Cork-street were

increased. In Doctor Steevens' Hospital 90 beds were provided, and in Sir Patrick Dunn's Clinical Hospital 100 also were maintained at the expense of Government. Thus little less than 1200 beds were occupied by fever patients in Dublin alone. In the month of October 1818, the number of beds in these hospitals was as follows:

|                           |   |   |   |                  |
|---------------------------|---|---|---|------------------|
| House of Industry         | - | - | - | 746              |
| Cork-street Hospital      | - | - | - | 260              |
| Doctor Steevens' Do.      | - | - | - | 90               |
| Sir Patrick Dunn's, M. D. | - | - | - | 100              |
| Total,                    |   |   |   | <hr/> 1196 <hr/> |



The following is a statement of the number of patients admitted monthly into each Hospital, and of the mortality, from the 1st of January 1818, to the 1st of January 1819.

| Months.            | House of Industry. |      | Cork-street. |      | Steeven's. |      | Dunn's.  |      |
|--------------------|--------------------|------|--------------|------|------------|------|----------|------|
|                    | Adm.               | Died | Adm          | Died | Adm        | Died | Adm      | Died |
| January, .....     | 765                | 68   | 512          | 32   | 180        | 3    | 1        | 0    |
| February, .....    | 851                | 71   | 498          | 20   | 178        | 3    | 91       | 1    |
| March, .....       | 882                | 55   | 542          | 21   | 171        | 1    | 116      | 8    |
| April, .....       | 869                | 36   | 544          | 21   | 167        | 4    | 154      | 6    |
| May, .....         | 943                | 38   | 639          | 15   | 222        | 4    | 61       | 4    |
| June, .....        | 1206               | 42   | 588          | 20   | 261        | 2    | 47       | 1    |
| July, .....        | 1477               | 37   | 668          | 13   | 273        | 3    | 35       | 5    |
| August, .....      | 1663               | 76   | 747          | 11   | 303        | 13   | 10       | 1    |
| September, ...     | 1522               | 89   | 685          | 15   | 269        | 8    | 150      | 3    |
| October, .....     | 1683               | 79   | 752          | 26   | 312        | 4    | 243      | 9    |
| November, ...      | 1618               | 76   | 719          | 27   | 287        | 6    | 238      | 5    |
| Décember, ...      | 1484               | 90   | 714          | 26   | 280        | 7    | 219      | 5    |
| Total, .....       | 14,963             | 757  | 7608         | 257  | 2903       | 58   | 1365     | 48   |
| Average Mortality, | 1 in 21.           |      | 1 in 30.     |      | 1 in 50.   |      | 1 in 28. |      |

Assuming as the commencement of the epidemic, the 1st of September 1817, and dividing it

during its continuance into periods of three months, the following is a general report of all the fever patients admitted into the Dublin hospitals from that date until the end of May 1819 :

#### FIRST PERIOD.

Total of admissions during three months, ending 30th

|                 |   |   |   |   |      |
|-----------------|---|---|---|---|------|
| November, 1817, | - | - | - | - | 2752 |
|-----------------|---|---|---|---|------|

|                           |   |   |   |   |     |
|---------------------------|---|---|---|---|-----|
| Total of deaths in ditto, | - | - | - | - | 168 |
|---------------------------|---|---|---|---|-----|

Mortality somewhat below one in 16.

Average daily admissions somewhat more than 30.

#### SECOND PERIOD.

Total of admissions during three months, ending 28th

|                    |   |   |   |   |      |
|--------------------|---|---|---|---|------|
| of February, 1818, | - | - | - | - | 4344 |
|--------------------|---|---|---|---|------|

|                        |   |   |   |   |     |
|------------------------|---|---|---|---|-----|
| Total of deaths in do. | - | - | - | - | 288 |
|------------------------|---|---|---|---|-----|

Mortality somewhat below one in 15.

Average daily admissions somewhat more than 48.

#### THIRD PERIOD.

Total of admissions during three months, ending 31st

|               |   |   |   |   |      |
|---------------|---|---|---|---|------|
| of May, 1818, | - | - | - | - | 5297 |
|---------------|---|---|---|---|------|

|                        |   |   |   |   |     |
|------------------------|---|---|---|---|-----|
| Total of deaths in do. | - | - | - | - | 221 |
|------------------------|---|---|---|---|-----|

Mortality somewhat above one in 24.

Average daily admissions nearly 58.

#### FOURTH PERIOD.

Total of admissions during three months, ending

|                       |   |   |   |   |      |
|-----------------------|---|---|---|---|------|
| 31st of August, 1818, | - | - | - | - | 7377 |
|-----------------------|---|---|---|---|------|

|                        |   |   |   |   |     |
|------------------------|---|---|---|---|-----|
| Total of deaths in do. | - | - | - | - | 226 |
|------------------------|---|---|---|---|-----|

Mortality somewhat below one in 32.

Average daily admissions somewhat more than 80.



FIFTH PERIOD.

Total of admissions during three months, ending 30th

|                 |   |   |   |      |
|-----------------|---|---|---|------|
| November, 1818, | - | - | - | 8611 |
|-----------------|---|---|---|------|

|                        |   |   |   |     |
|------------------------|---|---|---|-----|
| Total of deaths in do. | - | - | - | 350 |
|------------------------|---|---|---|-----|

Mortality one in 22 nearly.

Average daily admissions upwards of  $94\frac{1}{2}$ .

SIXTH PERIOD.

Admissions during three months, ending 28th of Fe-

|               |   |   |   |      |
|---------------|---|---|---|------|
| bruary, 1819, | - | - | - | 6870 |
|---------------|---|---|---|------|

|                        |   |   |   |     |
|------------------------|---|---|---|-----|
| Total of deaths in do. | - | - | - | 365 |
|------------------------|---|---|---|-----|

Mortality about one in 19.

Average daily admissions somewhat more than 76.

SEVENTH PERIOD.

Total of admissions during three months, ending 31st

|            |   |   |   |      |
|------------|---|---|---|------|
| May, 1819, | - | - | - | 4347 |
|------------|---|---|---|------|

|                        |   |   |   |     |
|------------------------|---|---|---|-----|
| Total of deaths in do. | - | - | - | 239 |
|------------------------|---|---|---|-----|

Mortality less than one in 18.

Average daily admissions somewhat more than 47.

|  |   |        |
|--|---|--------|
| Making in the entire, a total of admissions, | - | 39,598 |
|--|---|--------|

|            |   |       |
|------------|---|-------|
| Of deaths, | - | 1,857 |
|------------|---|-------|

These documents seem to me to be quite sufficient, as far at least as numerical statements can go, to afford a precise, and at the same time a general view, of the progress of fever in Dublin for several years past. I shall therefore not unnecessarily multiply them by introducing others of more minute detail, but proceed to offer such remarks as have been suggested by the consideration of

those which I have already given. The first, and what I conceive to be a most important inference is, that fever may prevail indifferently, and to a great extent, in years favourable to the productions of the soil, as well as in those in which the harvests have almost entirely failed, and should therefore, by no means, be ascribed solely to vitiated nutriment. The experience of the year 1815 is of this a convincing proof; for though the harvests of that and the preceding year were most productive, and it was of course impossible that, in any part of the year 1815, the food generally consumed could have been unwholesome, yet we find, from the table of applications, that the applicants were more numerous in that than in any either of the two previous, or of the two following years. The year 1813, with respect to the quantity and quality of provisions, was an average year; and 1814 and 1815 were more plentiful than usual, while in 1816 the harvest was nearly destroyed.

It appears, however, that in 1815 fever prevailed to a much greater extent than in 1816, or 1817; in the latter of which the effects of the failure of the crop of the preceding year must have been principally felt. In November 1816, in consequence of the scarcity and bad quality of the bread, it even became necessary to substitute stirabout in its stead for breakfast at the hospital,



an alteration in the diet of the patients which was continued during a great part of the following year. In 1817 the applications, notwithstanding, were 714 less than in 1815. The harvest of 1817, though not as favourable as could have been wished, was however reasonably good ; and this, with the importation of foreign flour, and other supplies, not only improved the quality of the food, but lowered its price considerably, previous to the period at which fever first evidently began to increase.

With these facts recorded, and admitted by all, it seems not easy to comprehend on what principle it is contended that the fever of Dublin is to be referred entirely to bad harvests and unwholesome food. It is allowed on all hands, and the history of every country confirms the opinion, that pestilence is an almost certain attendant on famine ; but it would be rather too much to argue from thence, that famine is its exclusive cause,—that proceeding from famine it is not at all, or scarcely, contagious, and that it is to be arrested in its progress only by affording the poor an abundant supply of wholesome food.

In reasoning upon a subject so complicated, and of such extent in its relation to the previous and existing state of society, and one so likely to be modified by passing events, as the origin and

progress of an epidemic, we should not affect too much simplicity, nor should we endeavour to ascribe to a single cause that which has probably been the result of several. If, as has been asserted, “deficiency, as well as vitiation of nutriment, is to be considered a chief source of epidemics,” how comes it to pass, that an epidemic does not uniformly occur whenever nutriment becomes deficient or depraved?—or how does it happen, that where provisions are not only good, but abundant, the most dreadful epidemics have prevailed? Provisions had seldom been more plenty in London than at the time when the plague of 1665 first appeared, and which, we are told by Sydenham, arrived so rapidly at its acmè, that about the autumnal equinox, in one week alone, nearly 8,000 persons perished, although not less than two-thirds of the inhabitants had previously fled from the city, to avoid the contagion.\*

\* Opera Universa, Sydenham, Ed. tertia. p. 70.—On this occasion Sydenham, though he evidently clings to his favourite theory of the “Epidemic constitution of the air,” is forced to admit its insufficiency as a general explanation, and acknowledges that contagion must exert a certain influence; candidly observing, “*Aliàs enim non assequor, què fiat ut in eodem cœli tractu dum unum aliquod opidum Peste gravissimè affligitur, aliud non longe dissitum, omnem commercii necessitudinem cum loco contagioso cautè inhibendo, prorsus immune se præstiterit.*” (Pag. 73.)



On the other hand, we have numerous instances of persons suffering the most extreme privations, and living, for a length of time, on food tainted to such a degree, as to become itself nearly a source of infection. Under such circumstances we know that life has often been protracted to an almost incredible period; and that when death has at last taken place, it was produced, not by fever, but by inanition, or some disease consequent on it. Can we then, with such facts before us, give our assent to the proposition, that fever is principally caused by “a want of wholesome food?” Those who maintain this doctrine assuredly take too limited a view of the subject, and overlook many other circumstances to which epidemics may with greater justice be ascribed. Not to speak of contagion, the power of which, in propagating the continued fevers of our climate, is clearly ascertained, are there no other causes capable of producing fever?—or, in doubting that epidemics always proceed from want and distress, shall we run into the opposite extreme, and refer every individual case of fever to contagion alone?

That fever is contagious, is now so well established, that I believe there are few physicians so much the slaves of theory as to doubt the accuracy of an opinion, the truth of which is generally admitted. Even the most uninformed and superficial observer is persuaded of the fact, and so fully

convinced is he of the contagious properties of fever, that he will not, without great reluctance, expose himself to its influence.

Many popular opinions connected with medical facts, when strictly inquired into, will be found to have some analogy—some appearance of reason to support them; and certainly, as far as regards this question, the general impression amongst all classes is, that fever is propagated by contagion. On various occasions I have minutely inquired into the causes of fevers which have made their appearance in the habitations of the poor, and which had spread through entire families, and I have been informed, that the disease was introduced by persons who had been received into their houses, either actually ill, or in a state of convalescence from fever. So strong is the conviction of the lower classes, amongst whom fever spreads most rapidly, as to the contagious nature of the disease, that I cannot call to my recollection any instance in which the possibility of its being thus communicated was doubted; while on the contrary I can testify, that its presence has invariably been ascribed to contagion, whenever there has been reason to suspect that any intercourse had taken place with an infected person, or infected furniture or clothing. Indeed on this point all discussion seems nearly to have ceased, and the question as to the contagious properties



of the continued fevers of these countries, has been decided in the affirmative with scarcely a dissentient voice.

Thus far all are agreed. All admit the contagious nature of the measles and small-pox, and that they each depend on a specific contagion, has been abundantly proved ;—but they are also propagated when the application of the contagious principle cannot be traced, and has not been suspected to exist, although no one doubts but that it must have been applied. Arguing from these and similar facts, and influenced perhaps by a disposition to generalize, the advocates for the contagious nature of fever proceed still further, and many of them contend that all fevers which can be propagated by contagion are necessarily produced by it, and by it alone. Under this impression, they would limit all precautionary measures, having for their object the prevention of fever, solely to guard against the introduction of contagion ; or should contagion have actually appeared, and even prevailed to a considerable extent, they still are of opinion, that as it can only be diffused by means of contagion, all our exertions must prove unavailing unless particularly directed to the extinction of the contagion itself.

Although these opinions have been advanced, and are still maintained by physicians of high

character and great talent, I cannot however concur with them in supposing that our continued, or typhous fevers, are always produced by contagion. We constantly witness so many instances of fever in which the disease cannot be traced to contagion, and in which not even a suspicion exists of its having been applied, that we should require some direct and positive evidence to the contrary before we refuse our assent to the opinion, that they may occasionally originate spontaneously. It is not sufficient for those who maintain the exclusive influence of contagion to say, that in order to determine the possibility of the spontaneous origin of fever, it will be necessary to prove that no contagion whatever has been applied, although they at the same time assert, in accordance with their own theory, that contagion in a latent state, is so widely diffused as to saturate the persons and clothing of every member of society, requiring only the presence of some exciting cause to call it into action. May they not with equal propriety be called on to prove the truth of their position, and demonstrate that contagion has been applied whenever fever has occurred? If they fail to do so, those who differ from them may surely be permitted to assert, that the disease can occasionally originate from some other cause. Evidently, it does not add to our knowledge, first to assume it as a principle, that fever is always the product of contagion, and then



to argue in support of that principle, that because the disease is fever, contagion must of necessity have been applied in order to produce it. Neither is it to be admitted as an argument in favour of the doctrine which ascribes every thing to contagion, that some of its most ingenious supporters formerly entertained the contrary opinion, and having now, from increased experience, and, it is to be presumed, more accurate observation, adopted a different view of the subject, we have strong grounds for supposing that their previous opinions were incorrect. In conversation I have more than once heard this mode of reasoning employed, and I could perceive that it had some influence over those who find it less troublesome to yield implicitly to the authority of others, than to reason for themselves, and to investigate with care a perplexed and difficult subject.

It would be creditable to the powers of the human intellect, as well as a testimony the most favourable both of the extent and capacity of our understandings, if our progress in the acquisition of knowledge were thus progressive, and if, in discarding previous opinions, those which we may subsequently adopt were always to prove more correct than the former. But a moment's reflection will convince us that the fact is otherwise, that we are prone to error, and that it requires the constant and unremitting exertions even of

the best regulated mind, to preserve those acquisitions to which it has already attained. An argument, to carry with it conviction, must be derived from some more substantial source than the mere authority of any individual, however respectable for talent and ability; and certainly it must tend to retard the advancement of medical knowledge, if those disposed to inquire and investigate for themselves, are to be told that men of greater learning and experience entertain a different opinion, and that therefore any discussion of the subject is superfluous.

That fever is contagious, and in general communicated by contagion, all physicians, with a very few exceptions, are agreed. On this subject an instructive publication from the pen of Dr. Stokes has appeared, which exhibits in a condensed form the principal facts already known respecting contagion, together with some new and ingenious arguments, bearing also on the point in a manner equally forcible and convincing. I cannot however persuade myself but that the advocates for contagion, who ascribe fever always to contagion, err as much as those who deny its influence altogether. It is not unusual for men who have reasoned successfully, and succeeded in convincing themselves of the truth of certain principles, to push their arguments to a still greater length, and ascribe to their favourite theory



too general an application. This is peculiarly the case with writers who possess considerable talent, and are remarkable for the ingenuity with which they form a plausible hypothesis to explain what to others appears beyond their comprehension. This disposition to theory and to generalization is productive of much injury to medical science; it leads to the substitution of opinions for facts, and tends to place even the best authenticated observations either out of view altogether, or exhibits them in a light, or gives them a colouring quite different from that which they really possess, so as to render them in appearance less at variance with the previous notions of the theorist.

It is contended by some physicians of the first character and talent, that no condition of the animal economy, or combination of external agents, can occasion typhous fever, unless contagion shall have been applied to the system; in short, that where contagion has not been introduced, there fever cannot make its appearance. It is not easy to understand upon what grounds this opinion is founded; at least the reasons assigned for it do not appear to me sufficiently convincing. From the facts, now so well known with respect to the contagious nature of exanthematous fevers, the strongest arguments, it is true, have been brought forward to prove that ordinary fevers are also contagious; but to press the argument further,

and to conclude that all other fevers precisely resemble them in the manner in which they originate, would be far more than facts will warrant. Because the measles and small-pox are communicated only by contagion, are we therefore to assume, that all other fevers can be communicated only in the same way? Because it is admitted that measles and small-pox do not originate spontaneously, must we therefore, to be consistent, deny the spontaneous origin of typhous fever? It does not follow that, because a partial resemblance may exist between certain diseases, an equal similarity must prevail in other respects. We might with as much reason conclude that the eruptions should be the same both in the small-pox and measles, merely because these diseases are produced by specific contagions, as suppose that typhous fevers never originate spontaneously, because like the former diseases they are contagious, and are often attended with eruptions. There is in fact no essential connexion between the idea of contagion, and the mode in which the contagious principle has originated. The history of medicine furnishes us with instances of diseases extremely contagious appearing for the first time, and spreading with rapidity. We are not surely to suppose that the infectious principle had remained latent since the creation, and was called into action by a coincidence of circumstances favourable to its perfect developement. It is at least as easy to conceive



that the fortuitous concurrence of causes favourable to the generation of contagion, and to its subsequent dissemination, has at various periods given rise to those diseases which have afterwards spread from one individual to another.

Among the various products of the animal and vegetable kingdoms, some are constantly observed to occur, while others are very rarely met with, and are produced in quantities extremely minute. The properties of some are permanent, while those of others are evanescent, and quickly perish. Some are mild and agreeable, others acrid and unpleasant; some are inert, and others noxious. Of those injurious to health, some are so in their ordinary state, and others, while in a state of decomposition, giving rise to new combinations possessing new properties. Now in the course of those changes which take place without interruption amongst the various kinds of organized matter, it would seem that products may occasionally arise which never before existed, and which, when applied to the system, are capable of producing diseases of a character totally different from any hitherto observed. In this way only can we account for the appearance of new diseases; and if it be possible for any cause or combination of causes to occasion a new disease, why may not that disease be contagious, and be again called into existence, independently of con-

tagion, by the same causes which first occasioned it? The same causes even are not always necessary to produce the same effect, as we know that similar substances are sometimes generated by processes essentially different. If I might be permitted to illustrate this position by a reference to chemical facts, I could adduce as instances the artificial formation of tannin, sugar, camphor, and oxalic acid, &c. to prove that the same characteristic properties may be acquired in various ways. If tannin, a vegetable production, the result of a vital action and of a secretory process, can be procured merely by digesting charcoal in nitric acid, and if the process of vegetation can also be imitated, as in the other examples which I have mentioned, I think we should hesitate before we venture to deny the possible production of any other compound substance, except in the way in which it is usually produced.

The intermittent, or simplest form of fever, is proved to arise from marsh miasmata, or in other words, from compound particles produced from vegetable matter, and possessed of certain noxious qualities. Their production is, however, by no means confined to marshes alone, for in tropical countries, as in Bengal, or Ceylon, we are assured by a most intelligent author, that "mountainous countries covered with lofty woods, or thick jungles, give rise to fevers similar in every re-



spect to those of flat and marshy districts.”\* In Ireland the air is no where more pure than in the midst of extensive tracts of bog, and in those situations it is most unusual to meet with an intermittent, while in other places much better drained and cultivated, and to all appearance more healthy, intermittents not unfrequently occur. I have myself witnessed cases of intermittent fever in which it was not likely that marsh miasmata could have been applied, for the intermittent, supervened on fever of a continued form, which did not at first appear to differ from any ordinary case of continued fever. By degrees these fevers remitted, and at length settled into the regular tertian. These cases came under my observation in the year 1813, since which time I have not remarked a single instance of intermittent fever amongst the multitude of patients who subsequently passed through the hospital. Most of the persons affected were inhabitants of Dublin, and had resided in the city from their childhood. From the same quarter of the town, and even from the same houses, other patients have afterwards been removed, and yet their fever has not in any instance, which I have been able to trace, assumed the intermittent type. I do not pretend to explain why, in those instances, the intermittent

\* The Influence of Tropical Climates on European Constitutions, by James Johnson, M. D. 2d Edition, page 86.

form should have appeared, and why similar cases have not since been occasionally observed ; but this and the other facts which I have mentioned, I think sufficiently prove that in ascribing intermittents to marsh miasmata, and in accounting for the production of those miasmata a certain latitude of opinion must be allowed. In situations the most likely to generate them they are not produced, and intermittents are scarcely known. In districts apparently more favourable to health, intermittents prevail to a great extent ; intermittents have also been observed in instances which could not well be referred to marsh miasmata ; or if, in those instances, miasmata were really the exciting cause, such miasmata must have been generated under circumstances different from those by which they are usually produced. It would appear also, that the causes from whence fevers of a particular description are known to originate do not exclusively, or permanently belong to certain situations, but are transient in their nature, are exerted in places where they had not been previously observed, and again cease to exist, leaving those situations as healthy as before. Now, if the casual appearance, or spontaneous production of that principle which occasions intermittent fevers thus evidently occurs, it is not unreasonable to infer that, under peculiar circumstances, the peculiar principle which gives rise to continued fevers may equally be called into existence.



Every one is aware that fevers of the intermittent and remittent form, which originate from marsh miasmata, often become continued, and assume a typhoid character. Is it not then fair to pursue the analogy somewhat further, and presume, at least until the contrary shall be proved, that fevers, purely typhoid and contagious, may occasionally arise from causes quite independent of contagion? To me it appears only reasonable to suppose that such is the case. If we adopt the contrary opinion, and assert that typhous fever cannot be produced except by contagion, we shall involve ourselves in a still greater difficulty, and one which the advocates for contagion cannot explain, even according to their own principles. Typhous fever, say those who support the doctrine of exclusive contagion, never now originates from any casual cause;—neither the decomposition of animal or vegetable substances, nor the state of the fluids, however altered or diseased, can give rise to fever essentially typhous. The cause of typhous fever is a specific contagion, a certain principle *sui generis*, which, when applied to the human frame, occasions a peculiar fever, and one which in the end becomes itself contagious.

If this be the case, if contagious fever be produced solely by contagion, how, it may be asked, did fever first originate? It will not do to say, as

is sometimes said, that contagion was imported from foreign climates, where it had existed from time immemorial, and then to adduce as instances, the small-pox and measles. This is merely to beg the question. The hypothesis still remains to be proved, and still the difficulty recurs, as to how the contagious principle originated in these climates. It will not do to say, perhaps it originated with some of the inferior animals, like the cow-pock, but was afterwards continued and disseminated by its contagious properties alone. This however is at best a mere supposition, and even so, by no means supports the hypothesis itself, which denies the possibility of typhus originating except from contagion; for, admitting that contagious fevers were originally derived from the inferior animals, still we have to learn how they themselves first became infected. In short, as has been well remarked by Dr. O'Brien, "If the opinion that contagion is the only source of typhus were true, we must be reduced to the necessity of supposing that all contagious diseases were derived from Adam himself."\* This would indeed be a very improbable supposition, but unless it can be proved that every distinct species of contagion existed from the creation, and transmitted from one individual to another, has descended to the present day, it must be allowed that, under

\* Transactions of the College, 2d. vol. page 487.



certain circumstances favourable to their production, certain kinds of contagion may be generated. Authorities even are not wanted to prove that this is the case. The endemic fever of tropical climates is in almost every instance sporadic, being produced by the action of putrescent miasmata, exhaled from certain situations, and, like the intermittent of our country, it is not considered contagious. The most competent writers on this subject assure us that though this is the fact, yet when a great number of patients are confined together under certain circumstances, it does become contagious. This is the opinion of a most sensible writer, who judges from personal experience, and whose opportunities for observation have rarely been exceeded, or more zealously or efficiently employed in the acquisition of medical knowledge. Doctor Johnson, in his Essay on the influence of tropical climates, says, "If a man is seized with fever from greater predisposition, or from greater exposure to the causes enumerated, than his companions, he will not communicate the disease to another who may sleep even in the same chamber, where common cleanliness is observed. But, on the other hand, if great numbers are attacked nearly at the same time, and confined in the sick birth of a ship, or ill ventilated apartments, in hammocks, cots, or filthy beds, it is possible that a *contagious* atmosphere may be formed, which spreads a disease,

*wearing the livery of the prevailing endemic, but having a dangerous character superadded, namely, the power of reproducing itself in other subjects, both independent of, and in conjunction with, the original endemic cause.”\**

That the mere effluvia arising from a number of persons crowded together in unwholesome and badly ventilated situations, may acquire a degree of malignity capable of occasioning a fever, which will afterwards become infectious, is also rendered, I think, not only probable but certain, from a fact recorded by the same author. The army under the command of Sir John Moore, after its rapid retreat from the interior of the country to Corunna, could scarcely be supposed to have carried with it the infection of fever into the vessels in which it was embarked, as the baggage had been left behind, and the clothes of the soldiers were completely drenched by the rain, which poured down in torrents during the greater part of the retreat. Even before the transports arrived in England, a malignant fever broke out in every one of them, and on removing the sick to the hospitals prepared for them, the disease spread to the medical attendants and nurses. Nor was the disease communicated solely by personal

\* Johnson on Tropical Climates, page 81. See also page 101, 2d Edit.



contact. We are informed, that the greater part of a family fell a sacrifice to the effects of contagion, introduced by a blanket purchased from one of the soldiers after his return.\*

Even crowded or ill ventilated situations are not always necessary to the production of contagious fever. How often do we hear of persons, who having imprudently exposed themselves to cold or wet, when fatigued or overheated, have almost immediately experienced rigors, ushering in a continued fever of the most malignant form? And if such examples frequently occur, and causes so obvious and decisive can be assigned, surely it is contrary to the strict rules of philosophizing to search for others more remote and obscure. Once called into action, the disease then becomes capable of communicating itself by contagion, and may be traced in its progress, as it spreads from one individual to another. Illustrative of this, a circumstance is related in the first report of the hospital, and no doubt numerous similar instances, equally convincing, could be adduced to prove the spontaneous production of fever, and its subsequent extension by means of contagion. It is stated, as an example of the utility of fever hospitals, and of the propriety of immediately separating the sick from the healthy, that “a

\* Ibid, page 21.

physician of eminence in this city, and whose accuracy of observation is well known, traced with care the origin of a fever which spread through a family of thirteen persons, and found it to have commenced with a boy who had bathed when overheated, and while in a state of perspiration.”\*

From a consideration of these and other circumstances, I am persuaded that typhus does often originate spontaneously, and this conviction is in no degree weakened in consequence of observing that other contagious diseases do not now originate in the same way. Because we sometimes find that to accomplish a certain end, a long series of remote and complicated causes may be required, which are rarely found to concur so as to produce the same particular effect, it by no means follows, that causes of more frequent occurrence may not, in numberless instances, give rise to effects which, instead of being rarely observed, constantly present themselves to our notice. To maintain the contrary would be to controvert every principle which nature has established, and lead us to reject the evidence of our senses, rather than consent to renounce a favourite hypothesis. We know that some natural productions are extremely rare, and found only in a few situations, while others exist in the greatest profusion, and



are to be met with every where. Gold and platina are much less abundant than copper or iron, and the diamond is seldom found, while the coal formation is general, and extensively distributed. In the same way, various animals and vegetables exist only under certain circumstances of climate, soil, and aspect, suited to the preservation of their particular species. If then these are facts so obvious as not to admit of dispute, why may not the same principle hold good with respect to different species of contagion?—and may not some kinds of contagion, as that of typhous fever, spring up like the more common tribes of plants or animals, almost spontaneously, while other contagions, as those of the measles and small-pox, are produced with great difficulty, and only under circumstances which may never again concur to call them into existence? If this position be correct, we can easily explain the occasional appearance of new diseases, and the gradual decay and final disappearance of others,—facts, of which the history of medicine furnishes us with many examples. If the contrary opinion is, notwithstanding, to be adopted, various instances will be found to occur for which we cannot offer an explanation without involving ourselves in the greatest inconsistency. Thus, in the *Edinburgh Review* for March 1819; in an article on the present epidemic, it is contended that typhus is always produced by contagion, and yet the writer immediately after

observes, "Nay further, we do not absolutely deny that a series of these predisposing circumstances, constantly applied, may, by their incessant operation, excite fever in the system without the aid of contagion at all; but the malady thus excited, though often mistaken for the genuine typhus, is only an occasional, incidental, or (to use medical language,) a sporadic disease; and as it is not derived from contagion, so it never becomes contagious in its progress, or infects the healthy who hold intercourse with the sick, *unless its original nature is changed by crowding, and defective ventilation.*" This being once admitted, every thing is conceded to those who think that typhus may, and often does, originate spontaneously; for either typhus is a word totally without meaning, or, if applied to any class or description of fevers, it will be found to comprehend a very great proportion of those which, having at first originated spontaneously, have afterwards become contagious. The dispute evidently then becomes one, as to the proper meaning and right application of a word, and not as regarding a matter of fact, the accuracy of which is acknowledged. If we adhere to the definition of typhus, as it is used by Cullen, we may safely affirm that numerous cases of fever will be found to agree with it in the circumstances pointed out by him, and which cannot, however, be supposed to have originated in contagion.



By admitting that fever arises from various sources, we can more readily account for the origin and progress of epidemics, and by tracing them to their predisponent and exciting causes, suggest such measures as may be most likely to prevent or suppress them.

Next to contagion, the great exciting cause of fever, I consider a *distressed state* of the general population of any particular district the most common, and at the same time, the most extensive source of typhous fever. It appears to me a matter of indifference whether this distressed condition of a considerable number of individuals shall have been the result of war, or may have been produced by the more gradual progress of domestic misfortune. In either case, that peculiar state is induced which both calls contagion into existence, and which at the same time renders the human frame more susceptible of its influence. When distress prevails, the depressing passions must lower the energy of the nervous system, and dispose it to the reception of contagion, while the causes likely to generate contagion concur at the same time to produce it. To the connexion, and reciprocal action of both of these, the present epidemic is to be ascribed. It is principally to be referred to the miserable condition of the poorer classes of this kingdom, and so long as their state shall continue unimproved, so long will

fever prevail,—probably not to its present extent, but certainly to an extent sufficient to render it, at all times, a national affliction.

Though the contagion of fever had never been introduced from abroad, and no satisfactory proof has been given of this fact, the epidemic would have prevailed ; and though every particle of contagion had been previously annihilated, still it would have made its appearance, have assumed the precise character of the present epidemic, and like it, have been equally propagated by contagion. Exposure to cold or wet, intemperance, fatigue, excessive heat, suppressed perspiration, and mental emotions of the depressing kind, may, when they take place to a high degree, induce fever without the assistance of any other cause ; but if there is superadded to these, an accumulation of animal effluvia, collected and concentrated in filthy, crowded, and ill ventilated dwellings, every thing leads us to conclude, that contagion must be generated under such circumstances. Once produced, it must rapidly spread, and even were it entirely extinguished, it would presently be reproduced, unless the circumstances favourable to its production were counteracted or removed.

In general it may be observed, that any one of the exciting causes of fever is seldom sufficient of itself to produce the disease. Even contagion,



though introduced into the system, is often incapable of occasioning fever, the system not unfrequently being rendered proof against its effects by some more powerful influence. Those causes especially which act on the system through the medium of the mind, more than any others either give security to the individual, or render him liable to the effects of contagion. Hope, confidence, enthusiasm, and an ardent, enterprising spirit, will enable men to support great fatigues and privations, to encounter trying vicissitudes of cold and heat, and bear up against the want almost of the necessaries of life, without suffering from the effects of contagious disease. Of this, the medical history of armies will afford numerous remarkable and decisive instances. But the moment the scene changes, and a series of reverses, and particularly if they are unexpected, occur—when disappointment, apprehension, and despondency seize upon the mind, disease is produced, and contagious fevers and dysenteries break out.

Precisely similar seems to me to be the case in civil society. In crowded cities, where much poverty prevails, the inhabitants, listless and desponding, are rendered inattentive to cleanliness in their persons or habitations; their contracted means compel numbers to reside in the same dwelling, to lessen their expense for rent, furni-

ture, and fuel, while their apartments are, in general, filthy and badly ventilated. In the winter seasons this is particularly observed to be the case, for in consequence of the want of fuel, and of sufficient clothing, every aperture is closed through which the air might be likely to procure admission. The contagion of fever is, therefore, soon developed, and almost every individual within the sphere of its operation, and predisposed by the debilitating effects of mental anxiety, is sooner or later attacked by the disease. Let us suppose that the person first attacked is, immediately on the appearance of fever, removed to an hospital, can we hope that those who remain will be thereby effectually secured against the disease, and that its further progress will be arrested? To remove the sick, and whitewash the walls of his apartment, will not exterminate fever. Neither will the fumigation of the persons and clothing of the poor, or the destruction of their old and infected furniture, prevent the disease from again appearing; nor will it answer the end proposed, to distribute gratuitously clothing and provisions, under the idea that distress being the cause of the epidemic, a sufficient supply of good food ought naturally to be the most likely mode of suppressing it. These measures only palliate the evil, and so far they are useful;—but we should by no means suppose that, in adopting them, there remains nothing further to be done.



Effectually to suppress fever, we must direct our attention to the moral, as well as to the physical state of the society in which it habitually prevails. Whenever the former condition is permanently defective, such is their intimate connexion, that the latter will almost invariably be found to present all those circumstances which are the most likely to engender and disseminate contagious disease. In the better classes of society fever seldom originates spontaneously ; and even when it may happen to do so, or has been communicated by contagion, it does not spread through entire families, as frequently as when it appears amongst the poor. The contagion however is the same, or if any difference is to be observed in its effects, they are more severe, and the symptoms are more violent, and indicate a disease of greater malignity in the higher orders. With the exception, therefore, of some particular cases, such as the introduction of a specific contagion of peculiar malignity, and affecting all individuals with nearly equal facility, it is certain that, could the manners and habits of the inferior classes be assimilated to those of a better description, febrile diseases would be much less frequent than they now are.

With natural advantages not exceeded by those of any other country in the world, with a soil the most fertile, and a climate favourable to the abun-

dant production of every necessary of life, this kingdom unfortunately exhibits not a few casual instances of wretchedness, but extensive, and large masses of misery. In the cities and manufacturing towns this is more obviously the case. The persons most afflicted by distress and disease are those who support themselves and their families by their manual labour. In general they are uneducated, thoughtless, and improvident. A shortsighted policy, which a century ago, from a spirit of religious jealousy and of commercial monopoly, enacted laws to prevent education, and to check the first efforts of industry, yet lives in its effects. Although a more wise and liberal system of government has succeeded, numerous prohibitions have been removed, and even encouragement is now offered to stimulate industry, and excite enterprise, still a nation cannot at once assume a new character, and divest itself of its former habits and prejudices. This must be the work of time, perhaps even of successive generations; but until such improvement shall take place, the evils inseparable from intemperance and irregularity of every kind, desultory application to labour, alternated with intervals of total idleness, habitual dissatisfaction and despondency, poverty, and residence in crowded, filthy, and badly ventilated dwellings, must be looked for as a natural consequence. While these remain, I regard it as an axiom, that fever must continue to prevail, and



originating with the poorer portion of the population, assume the character of an epidemic, as circumstances shall from time to time occur favourable to its increase.

In Dublin fever has existed during a longer period, and to a greater extent, than in any other city in the empire. It may be worth while to inquire why Dublin, justly considered one of the finest and most beautiful cities in Europe, and possessing every natural advantage likely to render it healthy, has been thus singularly afflicted. Formerly the seat of government, and the residence of the nobility and gentry of Ireland, many of whom lived in great splendour, and supported expensive establishments, it flourished from this cause alone ; and a large proportion of its population was maintained by the employment afforded in supplying their wants and luxuries. Manufactures were encouraged, and every inducement which the influence of rank and fashion could offer, was held out to promote the consumption of those which were produced by the inhabitants of the liberty, and its vicinity. Thus not only wealth flowed into the city from every part of the kingdom, but the population rapidly increased from the numbers engaged in the various manufactories which were then established. In the silk, cotton, and woollen trades, large properties were embarked, and the specula-

tions of individuals in these branches, and their competition with each other, often rendered it more difficult for the manufacturer to procure workmen, than for the workmen to obtain employment. From the encouragement afforded to the latter description of persons, their numbers greatly augmented, so that when the union with Great Britain took place, the liberties of Dublin were almost exclusively inhabited by wealthy manufacturers, and by a vast population which entirely depended upon them for support.

Scarcely had the act of union been carried into effect, when its pernicious consequences were felt in Dublin generally, but particularly in the liberties, where the population was the most dense, and where even a temporary interruption of trade must have occasioned great distress. Deprived of its parliament, and retaining only the shadow of a court, Dublin was immediately deserted by those under whose protection alone it had hitherto flourished. The stimulus which their patronage afforded was no sooner withdrawn, and transferred to the rival manufacturers of another kingdom, when it plainly appeared that, left to its natural resources, Dublin could not support itself as a manufacturing city. The wealth that had been acquired previous to this period of our history kept alive for a time its decaying manufactures, the delusive hopes held out at the union,



and the expectation of better times, tempting their proprietors still to persevere. By degrees their capital mouldered away, and while their profits every day became more uncertain, their losses and expenses increased. Several manufacturers prudently retired altogether, and many who were more sanguine became embarrassed, or failed for large sums, involving others in the same ruin with themselves. Extensive manufactories were closed, and the liberty gradually fell into decay. The houses of wealthy and respectable individuals, in erecting which vast sums had been expended, became untenanted, and some of them are at this moment let in separate apartments to the poorest description of persons, for, perhaps, little more than pays the ground rent and taxes.\*

If with the decay of trade, and of the liberty, its population had equally decreased, possibly fever would have been in proportion as rare now,

\* In visiting the sick poor, I have sometimes witnessed instances of the greatest poverty in rooms the ceilings of which were highly ornamented with expensive stucco work. These rooms, of course, were once richly furnished, and inhabited by persons in affluent circumstances, but now they contained scarcely sufficient straw for the wretched patients to rest upon. Of the windows, most were broken, some half built up, and others entirely closed to avoid the tax; the stair-case almost impassable, and the hall the common receptacle for the accumulated filth of the entire house, which contained as many distinct families as there were rooms.

as it was during the period in which manufactures flourished, and the weavers and other tradesmen possessed constant employment, and received ample wages. Had this been the case, one of the principal sources of contagious fever would have been obviated, and the accumulation of human effluvia, arising from several individuals, and concentrated in close and dirty apartments, would not have occurred—or at least not to the same extent as at present. But this was an event not to be expected, for manufacturers, and particularly those who have been reared in cities, cannot easily apply themselves to new pursuits, or engage in the more laborious occupations of agricultural business. Even were they disposed to do so, and admitting that they possessed sufficient health and strength to support the change, still the country was already supplied with labourers, and could not afford them employment. They were, therefore, compelled to cling to the trade to which they had been brought up from the first, and even to train their children to the same, although evidently insufficient to give employment to those already engaged in it. Thus, instead of decreasing, the population of the liberty has greatly increased, and in the same ratio, also, have their poverty and proneness to disease.

Why manufactures should not thrive in Dublin as well as in Scotch or English towns, I do not



pretend to explain. Perhaps manufactures have been attempted in Dublin to which its situation was not suited, and though while artificially supported they appeared to flourish, yet when this support was withdrawn, they gradually decayed:— or, it may be owing to a want of capital, or of enterprise in our merchants to export them to other markets, as the Scotch and English merchants do those of their respective countries. It is sufficient, at all events, for my purpose, simply to state the fact. The mere circumstance of a crowded, unemployed, manufacturing population is, I conceive, a sufficient reason for ascribing the gradual increase of fever to this cause; and as I have already observed, so long as their condition shall remain unimproved, so long will fever continue to exist.

It becomes then a question for the consideration of the physician, as well as of the philanthropist, and of the political economist, to discuss what are the measures most likely to better the condition of the poor.

As far as I have been able to form an opinion on the subject, I am persuaded that no permanent advantage can be expected to result from any system which has not for its object that species of relief which enables the poor to assist themselves. The gratuitous distribution of clothing and food,

I am sure, does little good, for the very acceptance of such charity has a direct tendency to destroy that spirit of independence and of confidence in their own exertions, which the industrious should always feel, and without which the greatest necessity alone will compel them to work. The injudicious and indiscriminate distribution of alms is a bounty to mendicity, and an indirect encouragement to poverty; for it is well known, that persons who have been accustomed to derive a precarious subsistence from the casual charity of others, would rather submit to the greatest occasional privations, than renounce their habits of idleness and irregularity. It is well known, that persons of this description who could have procured employment, and wages sufficient to maintain them with decency, have rejected the offer, and refused to make the slightest exertion for themselves. If such be the case with respect to mendicity, the same principle will apply to the other instances of ill directed attempts to assist the poor. The clothes which are distributed amongst the convalescent patients when they are discharged from some of the hospitals, are constantly disposed of for much less than their value, and the money thus procured is wasted in a day or two. Some clothes had been stolen from Sir Patrick Dunn's Hospital, and on searching for them at the different pawnbrokers in the neighbourhood, there were found quantities of the



clothing with which the patients had been supplied previous to their dismissal. From this it is evident, that the object proposed by clothing the poor was not, at least in this instance, attained ; and I think there is as little good done by the distribution of provisions. No society can be well regulated, or established on a settled basis, in which it is deemed necessary, in imitation of the Roman policy, to offer the *panem et circenses* to the populace as a substitute for labour, and as an inducement to tranquillity.

Are the poor then to receive no relief, and are they to be neither clothed nor fed ? Assuredly, they are not to be neglected ; and it is the duty of the legislature, and of the more wealthy portion of the community, to encourage and assist them : the principle is admitted by all, the only difference of opinion that can exist is, as to the mode of carrying it into effect. The object should be, not to feed the poor, but to employ them. Once regularly employed, receiving a reasonable remuneration for their labour, and accustomed to habits of industry, they will find no difficulty in maintaining themselves. Under such circumstances, perhaps the less they are interfered with the better. The possession of a little imparts to almost every individual the desire of acquiring something more ; and this feeling, so natural to the human mind, would be found to excite the poor to exertion, by

opening to them the prospect of additional comfort, and possibly of future independence.\*

\* The establishment of Saving Banks will, after some time, be found to contribute materially to the introduction of moral, sober, and provident habits amongst the lower classes. Their influence hitherto has been scarcely perceptible, for from their recent introduction, their advantages are not as yet sufficiently understood by those persons for whom they are principally intended, and the example of the few who do avail themselves of them, is too limited to excite the emulation of the great majority, who are naturally thoughtless and imprudent. This disproportion will gradually diminish; and when considerable sums shall have been accumulated by individuals in the humble walks of life, so as to enable them to emerge from obscurity, the attention of persons of their own rank must be forcibly directed to the means by which they were thus enabled to arrive at independence. In this way the Saving Banks will, by degrees, become more popular, and consequently of more extensive utility. That their advancement is progressive in Dublin, appears from the circumstance that, in Peter's parish, £13,398 : 16 : 3 has been deposited since the formation of the Bank in February 1818, of which sum there remained in Bank on the 1st of May 1819, £9,113 : 17 : 8. In this Bank a regulation is adopted, which has been productive of the best effects. To prevent unnecessary trouble, it was ordered by the Committee, that a certain notice should be given by those who wished to claim their deposits. I am informed, that in numerous instances this slight check has proved sufficient to preserve their entire savings, the notices having constantly been withdrawn previous to the time at which their deposit was to have been paid, the urgency proving only temporary, which caused them to wish to call it in. Had the savings been paid in the first instance, they would most probably have been misapplied, and perhaps never again replaced.



Much also may be done by education of a solid, practical kind; not that superficial education which merely teaches them to read and write, without improving their minds, or confirming them in the principles of prudence and morality. Education, which inculcates industry, and impresses on the minds of the lower classes a thorough conviction of the advantages of which it must necessarily be productive, will render them much more valuable members of the community than any other system, however excellent in theory, but, notwithstanding, less applicable to the common purposes of life.

To trace existing evils to the sources from whence they originate may be an easy matter, but to suggest a safe and practicable remedy is what I should scarcely presume to attempt; nor indeed would it be possible for me to offer anything original, or even to give an opinion which has not been already repeatedly advanced by others. One thing however is obvious, it is certain, that to the absence of the landed proprietors most of the past and present distress of Ireland is to be attributed, and that in remitting to them their incomes, this kingdom encounters a drain which must impoverish, and effectually prevent us from acquiring the capital necessary to enable us to become a great manufacturing and commercial nation. To the want of their countenance

and example, and to the poverty and numerous privations to which the poor are exposed in consequence of their non-residence, are to be ascribed the disorderly and turbulent character of the people, and their contempt for laws, which their prejudices and distresses have taught them to consider as partial and oppressive. To this every part of Ireland bears testimony ; the deserted residences and dilapidated mansions of the proprietors of the surrounding country, and the poverty of their tenantry, evinced by their squalid appearance, bad clothing, and wretched dwellings, all afford a tolerably accurate criterion of what they have to encounter who are deprived of the advantages that should revert to them from the encouragement of those to whom their labour is devoted. In England the distress of the manufacturers is excessive ; and it was lately asserted, that nearly £50,000 is, on an average, remitted daily to the Continent for the support of absentees. May not the commercial difficulties of England be in a great degree ascribed to this cause ; or, at all events, would they not have been greatly lessened if this enormous drain could have been prevented ? The difficulties of England at a time of profound peace, concurring with the extent of her remittances to absentees, render it probable that the distresses under which Ireland has so long suffered, are to be principally referred to the same cause. If such should be the case, the remedy can



rest only with the legislature. The subject is one of the first importance, and one which imperiously calls for the most marked attention on the part of the government of these countries, as connected not merely with the welfare of this kingdom, but as ultimately involving perhaps the interests of the entire empire.\*

\* A tax imposed on the properties of absentees has been repeatedly suggested, and would indeed be a measure of the best kind. Of all taxes this would seem to be, in principle, the least oppressive, and in its effects the most beneficial to the community. Luxuries have always been the peculiar objects of taxation; and if, to our landed gentry, a total neglect of their own, and a permanent residence in a foreign country be a luxury, it is by no means equitable, that while every necessary of life is taxed to the utmost, this *luxury* should be exempt. If an absentee tax were levied, and the produce applied to the maintenance of schools conducted on a liberal system, and also to provide premiums to be distributed among the tenantry of the estates thus deserted by their proprietors, the country would have less reason to regret their absence. The want of their countenance and encouragement would be in some measure supplied by the more general diffusion of education, and by the spirit of industry introduced by local societies, established for the advancement of agricultural knowledge, and furnished with the means of giving effect to their exertions. Were a system of this kind adopted, the resources of the empire would be increased, the condition of the lower orders would be meliorated, their manners softened by the possession of additional comforts, and their attachment to the government strengthened and confirmed.

Amongst the causes which tend to disseminate fever, the prevalence of mendicity deserves to be particularly noticed ; and the more so, because experience has proved, that the exertions of a few active and public-spirited individuals were competent to free Dublin from this great evil. The crowds of clamorous mendicants that formerly filled our streets, and obstructed the entrance of every shop, have now disappeared. Employment is provided for those who are able and willing to work, and who in return receive remuneration proportioned to their exertions. From the 8th of June, 1817, to the end of 1818, 7,500 mendicants were registered, and upwards of 2,000 are constantly engaged in the establishment. The institution opened with a sum not exceeding £1600, and for a considerable time had to contend with the greatest difficulties. By degrees the public, convinced of the possibility of accomplishing what they had before been accustomed to consider altogether impracticable, came forward with more liberal subscriptions. As to its permanency there cannot at present be a doubt, for subscriptions to the amount of £12,000 per annum will, in addition to the profits arising from labour, be quite sufficient to maintain it in full operation. It is not to be supposed that the inhabitants of Dublin, by withholding so small a sum, would consent to subject themselves to the recurrence of an evil, the extent and the injurious



consequences of which they are, from recent experience, fully capable of appreciating. The contrast between the appearance of our streets at present, and that which they formerly exhibited, is too obvious not to render us most anxious to uphold, even at the expense of considerable sacrifices, a system to which we are indebted for a change so truly gratifying.

From the experience of this institution, it appears that spinning is the most profitable employment; for in three weeks a woman can be taught to spin, so as not to cost the establishment more than 1½d. per day for her support. In Belfast the spinners not merely clear their expenses, but prove a source of profit to the institution; and there is reason to suppose that this will be the case in Dublin after a little time, when those engaged in this branch shall have become more expert. The education of the children of the mendicants has not been unattended to, for two schools were also established under the direction of the association, with a view “to combine the rudiments of education with the instruction of the children in some useful and simple employments, which will enable them in after life to earn their bread, independently of charitable aid.

That this association has a tendency to lessen fever, by promoting industry and preventing

habits of irregularity and intemperance, is sufficiently established by the report of the committee. It is there stated, that “fewer cases of fever now present themselves among the mendicants than formerly, and yet the progress of this awful visitation is by no means checked amongst the lower orders in general.” Its influence in improving the morals of the poor, had also become apparent in less than a year and a half from its commencement;—the magistrates having expressed their opinion, “that the cases of juvenile delinquency have considerably diminished in number since the association commenced active operations.”

To those who were so active in forwarding this great undertaking it must prove a source of the purest gratification to reflect, that their efforts have been thus successful, and that their exertions to suppress mendicity have had the further effects of reforming the profligate, preventing vice, and averting disease.

The efforts made by the inhabitants of Peter's parish, who subscribed in the most liberal manner for the relief of their own poor, should by no means be passed over in silence. In January, 1818, they formed a committee to receive subscriptions for the suppression of fever, to give clothing to the poor who appeared most to require it, to afford nourishment to those who were



dismissed from the hospitals while too weak to work, to supply them with fresh straw for bedding, to remove nuisances, and to cleanse and whitewash their apartments. They also hired a house, with a stove and bath, to disinfect the clothes and persons of those individuals in whose dwellings fever had appeared, and who, from their exposure to contagion, were likely either to suffer from the disease themselves, or to communicate it to others. From the formation of the committee to the beginning of December, £739 : 17s. was subscribed, 22,170 rations were distributed, and 1476 persons admitted into the cleansing house.

Though in Dublin there exists a wider field for the exercise of charity, and it so far may appear in a less favourable point of view than more prosperous cities, yet we have at least the satisfaction to think, that for pure and genuine philanthropy the character of its inhabitants stands pre-eminent. If any additional proof could be considered necessary to establish this trait in our national character, the experience of the past year would amply confirm it. It was not by merely subscribing to the funds for the relief of the poor that the affluent asserted their right to the title of benevolent—they did more, they gave their time, and devoted their personal exertions to the furtherance of the common good. With a zeal which the

heartless and calculating mind would consider an instance of imprudence, rather than of generous feeling, they exposed themselves to danger when inspecting the habitations of the poor, and while searching for proper objects to relieve. Some, it is well known, actually contracted fever in this way. One of the secretaries to the association for suppressing mendicity died, and of the clerks and others employed in superintending the establishment nine were taken ill. From this it is evident, that the duties imposed on the members of the different committees were such as few would undertake who were not actuated by motives of the most exalted benevolence.

As the epidemic still continued to increase, notwithstanding the great exertions that had been made, the government felt it necessary to adopt further means of precaution.

The anxiety of government to give every possible assistance towards suppressing fever, and mitigating the evils which it occasioned, together with their prompt and energetic adoption of the measures suggested as the most likely to effect this object, are sufficient proofs of the interest which they took in the preservation of the public health, and the liberality with which they supplied funds for this purpose, even at a period when the exigencies of the state were the most



pressing, has entitled them to the gratitude of the country.

The result has fully realized the expectations of those who hoped that the subdivision of the city into small districts, and the appointment of medical inspectors in each, and a general and simultaneous co-operation of the different minor committees, and of all the public institutions, would contribute most effectually to check the progress of the epidemic. The utility of this plan had been so strongly urged, and the propriety of adopting an extensive and well-organized system for the purpose was placed in so clear a light, that scarcely a doubt could exist as to the benefits of which it must be productive. From the experience now had of its many advantages, there can be no doubt but that, should a similar occasion occur to require extraordinary exertions, the appointment of a central committee of health will be one of the first measures adopted.

At present fever has greatly declined, and though it yet exceeds its usual average, still, from the uniformity of its decrease, there is reason to expect that it will soon fall to its ordinary standard. The number of beds at Cork-street has been reduced to 200, and at the House of Industry they have also been considerably lessened.

Having already spoken of the causes which seem to me to produce fever, and to extend its ravages, I shall now proceed to offer a few remarks with respect to the nature of the disease itself, the different forms under which it occurs, and the general principles which should regulate our practice in the treatment of each particular description.

On the subject of fever, and its treatment, so much has of late been written, that there would remain little to be said regarding it, were it not that the conflicting opinions of authors still contribute to involve in doubt points of great practical and theoretical importance. Where such discrepancy of opinion exists, and where arguments sufficiently plausible and ingenious are adduced in support of doctrines the most opposed to each other, it becomes a matter of some consequence to investigate the subject with a mind totally divested of prejudice, and anxious only to arrive at the truth. It must be of use to contrast with each other doctrines which lead to opposite modes of practice in the treatment of the same disease, for thus only can we judge with accuracy of their respective merits. In the management of a formidable disease, it is imperative on us to ascertain whether the practice we pursue is such as accords with the true nature of the symptoms, or is inconsistent with them, and contrary to the



essential character of the complaint: but when the same symptoms are ascribed to causes totally different, inconsistent modes of practice must be the result, and of these some must necessarily be less successful than others. In such cases theory serves only to perplex, and observation and experience can alone decide. Accurate observations should be made, different kinds of treatment adopted, and their effects ascertained and carefully compared, so as to determine, with as much accuracy as may be, the circumstances under which each may be employed with the greatest advantage.

With this view I shall offer some remarks on such points of the treatment of fever as may be considered subjects for discussion, although I am aware that inquiries of this kind are attended with much difficulty. It would be altogether vain to expect, that the opinion of any individual shall meet with general approbation, for the influence of previous doctrines must always be considerable, and few of us are willing to allow that our practice can have been less judicious than that of others from whom we differ in principle. For this very reason discussion should be encouraged, as it is obvious, that from the collision of conflicting opinions, truth is more likely to emanate than when the same unvaried uniformity of practice, and religious adherence to established doctrines,

sanction error, and oppose an almost insuperable barrier to innovation or improvement.

The prevalence of the existing epidemic, by affording almost every physician an opportunity of putting his opinions to the test of experience, has occasioned much inquiry into the nature of the disease, and the treatment most likely to conduct it to a favourable termination. Numerous publications have appeared explaining the pathology of fever, and recommending particular modes of practice, as confirmed both by theory and experience. The works of Doctors Armstrong, Percival, Bateman, and Clutterbuck, and different hospital and medical reports, have been read with interest by the profession, and have contributed greatly to elucidate this difficult subject. In general they agree in approving of the use of blood-letting as a safe and efficacious remedy in typhous fevers, and they strongly enforce its employment. Heretofore blood-letting was scarcely employed in fevers, and never in fevers of a malignant kind. So far, therefore, these writings have contributed to the improvement of medicine, by dispelling prejudices, and removing opinions which, though now admitted to be erroneous, were until lately very generally acted upon in practice. However, as often occurs in great revolutions, zeal, it is to be feared, has in some degree usurped the place of prudence, and an anxiety to



overturn the tottering remnants of a baseless system, may at the same time have occasioned much injury, by involving in the same ruin previous acquisitions of real value. Physicians, it is true, were formerly too timid in the employment of general blood-letting in fever, and too indiscriminate and profuse in the administration of wine and stimulants; but those of the present day, who place their faith exclusively in blood-letting, and regard stimulants as most injurious, certainly err, to the full as much, in the opposite extreme.

Doctor Clutterbuck has the merit of being one of the first who directed the public attention to the utility of blood-letting in fever, in a work published in 1807,\* and he has lately resumed the subject in a treatise which has just appeared.† On this treatise I shall submit a few remarks, and I select it because Dr. C. is evidently a writer of talent, and because it is the latest that has been published on a subject admitted by every physician to be one of the first importance.

The principal object which Dr. C. has in view is, to prove that fever is not a *universal* but a *topical* disease—that the topical affection from

\* Inquiry into the Seat and Nature of Fever, &c.

† Observations on the Prevention and Treatment of the Epidemic Fever.

whence all the febrile symptoms proceed, is uniformly *inflammatory*, and to be removed, like other inflammations, by blood-letting, practised to a sufficient extent, and sufficiently repeated. In this opinion he is followed by Dr. Mills, and to a certain extent by Doctors Bateman and Armstrong. They differ, however, as to the part which is the seat of the topical disease, and also as to the nature and degree of the existing inflammation. Dr. C. contends, that "the brain is the part primarily affected, and that the affection consists *essentially* in inflammation of *this* organ;" but Doctor Mills and others conceive, that *any* of the internal organs, in a state of active inflammation, may be the seat of fever.

Proceeding upon the principle that fever is, in fact, *inflammation of the brain*, he deprecates the idea of employing blood-letting as an occasional remedy for fever, and maintains that it is better calculated, and more efficiently applied to prevent its symptoms than to relieve them when they are actually present.

Accordingly he advises that, when fever prevails epidemically, blood should be taken at the very commencement of the *local* affection, although its symptoms are often so slight as to be almost disregarded by the patient himself. This practice of bleeding before the symptoms have developed



themselves, and when the patient can scarcely believe that he is ill, may, he thinks, be frequently dispensed with; but still he is of opinion, that by omitting it we make ourselves responsible for all the bad consequences which may ensue from our neglect. Blood-letting, when thus employed at the very commencement, will, he says, generally bring the disease to an almost immediate termination. Should the symptoms still proceed, and the *local* disease continue unsubdued, for example, when “the external senses are much disordered, the muscular power greatly weakened, and the mind early and much disturbed, *the most active* treatment is required in order to insure the patient’s safety.”\* Blood must then be immediately taken, at least to an extent of from twenty to thirty ounces, “for if only ten or twelve ounces be drawn, it is often found necessary to repeat the operation several times, till, in some instances, more than 80 or 100 ounces have been taken away.”†

These and similar positions are of a nature so serious, that they call for the most mature and deliberate consideration before we can be expected to afford our assent to them. The doctrine that *all* fevers are essentially inflammatory, has not yet received sufficient confirmation, either

\* See page 99.

† Ibid.

from pathological reasoning, or from anatomical research, to satisfy us of its accuracy ; and until it shall be clearly proved that such is the case, those physicians who entertain a contrary opinion, and refer the immediate cause of fever to a disordered state of the nervous system, altogether distinct from inflammation, have at least an equal right to presume that their theory is correct.

As far as anatomical investigation goes, it would appear that, in many cases of death from fever, no traces of inflammation were observable after death, and if only a single instance of this kind could be advanced, it would be sufficient to overturn the opposite opinion. That such cases do occur must appear evident from the observations of Doctor Macartney and Mr. Kirby, directed expressly to this subject, and published in the 2nd volume of the Transactions of the College of Physicians. The opportunities which these gentlemen possess, and their acknowledged ability as anatomists, give to their testimony on this subject, and one so completely within their province, a degree of authority which cannot easily be questioned. We are also told that, out of ten cases of the yellow fever of the West Indies, of a peculiarly aggravated kind, and where much delirium had been present, the *brain* did not exhibit any marked appearance of disease.\*

\* Johnson on Tropical Climates, page 350.



I do not pretend to deny that the brain, or any other organ of the body, can be occupied by inflammation during the continuance of fever. On the contrary, I am persuaded it often happens that, in the course of the fever, congestions of blood, and its unequal and irregular distribution, do actually occur in different organs, varying in degree from the lowest kind of passive congestion, to the most marked and decided form of active inflammation. In every instance, however, this congestion, or active inflammation of what kind soever it may be, is secondary, and depends on the peculiar state of the nervous system, the only part primarily and essentially affected. In what this condition of the nervous system consists I do not presume to explain, and I fear it is one of those secrets which nature will for ever conceal from us. Anatomical research cannot elucidate it, inasmuch as it is a modification of that unknown influence, the principle of life itself, which must cease to exist before the anatomist can have commenced his inquiries.

The appearance which the vascular system exhibits, to the anatomist, after death, is, I am convinced, by no means a correct representation of that which it possessed previous to that event. Although the vessels of the brain, or of any other internal organ, may seem distended with blood after death, and thus *in appearance* afford an in-

dication of a previous inflammatory state, it by no means follows that they were thus turgid during life. So long as the circulation continues the blood equally fills the cavities of the heart, the arteries and veins, but immediately after death the heart and larger arteries are emptied of their blood, and sometimes the larger veins even appear less full than before. What becomes of all this blood? Having left the larger vessels it must have passed into the vessels of the capillary system, which retaining their vitality longer, exercise their functions even after death. But they are also known to be the only seat of inflammation, and as, from the cause just stated, they often appear tumid and injected by the time the body is anatomically examined, it is not unfrequently inferred that they have been in a state of inflammation. The fallacy of such an inference is obvious, and is a proof of the little dependance that should be placed on any explanation of the proximate cause of disease deduced from mere anatomical examination. Even in all those cases in which the capillaries of any organ are distended previously to death, it may be doubted whether such distention or engorgement was identical with inflammation, or in any way connected with it. I have seen instances of patients who a few hours previous to their death exhibited marks of apparent inflammation, tending rapidly to gangrene, and which state clearly depended on a



deficiency of nervous energy, and constituted, in fact, the commencing dissolution of the part:—this occurring on the surface of the body is evident to the sight, and cannot be questioned. May not then the same process equally take place in the brain, and thus an appearance which is only the effect, come to be considered the cause of the disease? This is, I think, extremely probable, and it is likely that in this way very erroneous opinions may be adopted by the mere anatomist, with respect to the immediate cause of fever.

The doctrine which teaches that fever is a disease of the nervous system, and at the same time admits that this diseased action does often occasion local inflammation, seems to be nearer to the truth than if we were to ascribe fever to either of these causes exclusively. It embraces the advantages of both theories, and in a practical point of view comprehends every case of fever, and every variety of treatment which can be employed in its management. From an attentive consideration of the subject, and from such observations as I have been able to found on my own experience, I can affirm, that it leads to the most successful practice in the fever which now prevails in Ireland, and which is identical in its nature and symptoms with the ordinary fever that has always existed in this country. Its obvious tendency is to substitute a

rational treatment for blind empiricism, to cause the physician to reflect before he prescribes, and while it inculcates prudence, it by no means precludes him from adopting the most active measures in those cases in which they may appear to be necessary. It does not lead him to think lightly of experience, or to look upon the symptoms of the disease as unimportant; nor does it, by referring them all invariably to one simple condition of the system, and laying down a certain mode of treatment, expressly adapted to that supposed condition, render the business of prescribing a mere mechanical proceeding. So far it is certainly less showy, and presents fewer attractions to those who find it more easy to adopt at once a general theory, and particularly one which requires scarcely any discrimination in its application.

In the fevers which I have had an opportunity of observing, the practice recommended by Doctor C. is totally inadmissible; and, therefore, even admitting that his theory is much more probable than it appears to be, still the cases to which it is altogether inapplicable are so numerous, that it should be received and acted upon with the greatest caution. I cannot agree with Doctor C. in thinking that early blood-letting, when used with tolerable freedom, may be considered an almost certain *preventive* with regard to *symptoms of malignity*. My experience is quite at variance



with this opinion; and I can state, that some of the most malignant cases of fever which I have ever witnessed in the hospital, had been largely blooded by irregular practitioners previously to their admission. Amongst such patients the mortality is always greater; and I have remarked that, independently of their having a worse chance of recovery, they die within a much shorter period than others who have not been so actively treated. The same observation has, I believe, been made by every one of my colleagues, as well as by other physicians of the highest talent and character. How then are we to decide?—Are we to think with Dr. C. that *experience* is as liable to the charge of uncertainty as *theory*; and ought we, therefore, to reject the former in order to regulate our practice by the latter? Hitherto we have been accustomed to consider experience as the only sure foundation of theory, and the only test of its accuracy; and entertaining this belief, I implicitly subscribe to the opinion of Dr. Robert Graham, that when theory and experience are at variance, the practitioner is to be guided “by reflection on the circumstances of the case,” and should have recourse to “a repeated and more careful investigation of phenomena.”\*

\* Practical Observations on continued Fever, by Dr. Robert Graham, Regius Professor of Botany, Glasgow, quoted by Dr. Clutterbuck, page 150.

To speak confidently of diseases which I have never witnessed or treated, would be presumptuous, and therefore, in the opinions which I have advanced, I beg to be understood as alluding only to those which have come under my own observation—*Hibernos afficientes et in aëre Hiberno*. I do not affect thoroughly to understand the proper treatment either of the plague of Smyrna, or of the ardent fever of the West Indies; and with regard to the typhous fevers of London or Edinburgh I should think it right to express myself with diffidence, not having had that extensive and practical knowledge of any of those diseases, which I conceive could alone enable me to form a decided opinion as to their nature, and as to the mode of treatment most generally successful in each. I have long been persuaded, that the fevers of different climates and different countries differ in numerous instances so much from each other, as to require very different modes of practice, and that arguments derived from the nature and treatment of fevers of a foreign climate, may prove totally inapplicable to those which prevail in this.

No one can be more disposed than I am to appreciate highly the opinions of military practitioners, but still, for the reasons just stated, I cannot think that “the bold and decisive use made of this remedy (blood-letting) on various



occasions, during the late war, both in the navy and army, has placed its utility in the most striking point of view,"\* or that we are authorized to infer from its success in peculiar situations, and under certain circumstances, that it should be equally successful if generally adopted by us. On the contrary, I am satisfied that incalculable mischief must result to the inhabitants of this kingdom from a practice so "bold and decisive" as that which Dr. C. recommends.

In speaking of the mortality from fever, Dr. C. says, that in England, "In the hospitals and other institutions devoted to the reception of such cases, the proportion of deaths has varied from one in twelve, to one in five or six;" and he proceeds to observe, that "in Ireland, as appears from various statements published by the physicians of Dublin and Cork, the proportion of deaths has been nearly the same." It is to be presumed, on the authority of Dr. C. that in London, and those parts of England in which fever has prevailed, the mortality has been equal to what he represents, but certainly in Ireland it has been much less than he would lead us to believe. We are informed by Doctor Barry, that the deaths in Cork were one in twenty-six. In Waterford the proportion was about the same.

\* Dr. Clutterbuck, page 70.

In this fever hospital the deaths during the past year were only one in thirty, and the general average of all the Dublin fever hospitals has scarcely exceeded one in twenty-two. Such being the case, it is by no means necessary to suppose with Dr. C. that, at least in Ireland, the mortality is less in private than in hospital practice; and that the disease is in general too far advanced before admission into those institutions, to allow of much being done for its relief. Here it is the general opinion of physicians, that the mortality from fever is always greater in private, and certainly I cannot think it would be easy to find a Cork or Dublin practitioner who, having witnessed the treatment adopted in the fever institutions of either city, would agree with him in pronouncing, that after his removal to an hospital little remained to be done for the patient.

Were I, however, to hazard an opinion as to the intrinsic merit of his work, I should consider it a book of great value to the physician who has to prescribe in the endemic fever of our West India Islands, where a few hours decide the patient's fate, and the disease, unless strangled in its birth, terminates rapidly in dissolution. There not only the brain,\* according to the theory of

\* Dr. C. in his theory, has overlooked altogether the state of the spinal portion of the nervous system. On this subject.



Dr. C. but other viscera, and particularly the stomach, liver, and spleen, are often in a state of the most active inflammation. Under such circumstances not a moment is to be lost ; to wait for symptoms would be to resign the patient to his fate, and to acknowledge the total inutility of our art, by surrendering him without an effort.

In our climate, however, fever fortunately assumes a less alarming aspect ; its progress is more slow, and its symptoms are less violent. In numerous instances the unassisted efforts of nature are capable of bringing about a perfect crisis, and, in a great proportion, the business of the physician consists rather in watching them as they proceed, than in officiously interfering. It is this injudicious and ill-timed interference, and the indiscriminate employment of active remedies, which render it so dangerous to confide the management, even of a simple disease, to the imperfectly educated practitioner. Such persons, with scarcely any knowledge of medicine, except perhaps a confused idea of a few general principles, are too often disposed to adopt “a bold and decisive practice,” and we sometimes have occasion to witness the fatal consequences of their

a very interesting paper has been lately read before the Association by Dr. Robert Reid.

temerity, in cases which would probably have terminated very differently had they been more prudently treated, had less blood been taken, and fewer medicines administered.

I do not think it probable that the fever of Great Britain can essentially differ from that which prevails with us ; and I am, therefore, inclined to believe, that the works of Doctors Armstrong and Bateman in England, and of Graham and Duncan in Scotland, will be found to inculcate a more rational and judicious practice than that which Dr. C. so strongly advocates. All these writers speak favourably of the effects of blood-letting, but express themselves in a more cautious and qualified manner. Still, however, they in general seem disposed to employ it more freely than I should consider safe, in fevers exactly similar to those of Dublin. Probably they are in some respects different, and it is possible that those of England may require to be more actively treated. If Dr. C. is correct in stating that in London and England the mortality is from one in twelve to one in five or six, fever must be more severe there than it is here ; for, as I before observed, our mortality is about one in twenty-two. I would rather adopt this supposition, than consider the fever precisely the same in both countries, and thence conclude, that with us the mortality is less, because our practice



is more judicious than that of our English neighbours.

Of Dr. Edward Percival's Report on the epidemic fevers of Dublin, during the years 1813, 1814, and 1815,\* I cannot speak in terms of sufficient praise. It is regarded by the Dublin physicians, in general, as containing the most accurate account of the fevers of this country ; and as recommending, upon practical and rational grounds, those modes of treatment which experience has proved not only to be the most safe, but the most successful.

Dr. Cheyne has also given us two excellent Reports, and in his opinions and practice, he nearly coincides with the views adopted by his former colleague, Dr. Percival. In Dr. Cheyne's Reports I admire that candour which distinguishes them ; for in faithfully narrating his cases of fatal termination, he has set us an example worthy of imitation.

In speaking of the opinions of others, and in discussing their accuracy, perhaps I may appear to some to have occupied more of this Report than I should have done, considering it merely as a local

\* Transactions of the King and Queen's College of Physicians, 1st vol.

one ; but the importance of the subject must plead my excuse, should it be necessary to offer any apology, for an attempt, however humble, either to advance the practice of medicine, or to secure us in the possession of those improvements to which we have really attained. Of the general occurrences of the hospital, and of the progress of the epidemic, I have already given a brief account ; it therefore only remains for me to advert to the medical treatment pursued in the institution during the last year. In doing so I shall, of course, be considered solely responsible for whatever opinions I may advance, and should my inferences seem to any to be incorrect, I sincerely declare I shall feel pleasure at being induced, by the candid criticism of others, to reconsider them, not in order pertinaciously to adhere to them, but reject them myself the moment I shall be convinced of their inaccuracy.

In an institution through which there has passed, during the last year, 7608 patients, it would be quite impossible for the physicians to note accurately each individual case. Could they even devote sufficient time to this purpose, still, from the great similarity that exists both in the symptoms and treatment of a great proportion of the cases that come under their observation, such operose exactness would not be found to afford any information commensurate with the trouble.



For my own part, I seldom mark the symptoms, except in those cases which are attended with considerable danger, or possess some feature of unusual interest, convinced that the recital of recoveries, in which the physician has perhaps prescribed only a simple opening draught, cannot prove in the least instructive.

Not having noted all my cases, I think it proper to explain in what manner I have arrived at the practical inferences which I am about to draw with respect to the prevalence of particular symptoms, and the effects of the remedies employed for their removal. The physician, in his prescription book, enters under the name of each patient the remedies prescribed for him during his continuance in the hospital, so that, by a reference to these prescriptions, the general character of the disease can be at once ascertained. The manner in which each case terminates is also accurately noted, and in this way it immediately appears whether the remedies prescribed have been successfully employed or not.

When the patient recovers, and is dismissed cured, we may presume that his treatment has been judicious, as it is, in general, only in those cases in which death takes place that the propriety of the practice can be questioned. In most instances of death from fever, it will be

found that either the head, chest, or some of the abdominal viscera, have been more or less affected, and that unless they exhibit symptoms indicating considerable disturbance of their functions, recovery will almost always take place. I have therefore classed together, and arranged in a tabular form, those cases in which these organs seemed more especially to suffer, and for which the remedies appropriate to each description were prescribed, as ascertained by a reference to my prescriptions, in each month of the past year during which I attended at the hospital.



Table of the number of fever cases accompanied with complicated symptoms, as they occurred in each month, explaining the part of the system most affected, and affording a general view of the number of patients who were blooded, of the total quantity of blood taken, and of all the deaths.

|          | No. of cases<br>with complicated<br>symptoms. | Chest. | Bled. | Total oz. | Head. | Bled. | Total oz. | Abdom. | Bled. | Total oz. | Total Deaths. |
|----------|---|--------|-------|-----------|-------|-------|-----------|--------|-------|-----------|---------------|
| January  |   |        |       |           |       |       |           |        |       |           |               |
| February | 52  | 34     | 17    | 93        | 19    | 8     | 37        | 3      | 3     | 32        | 3             |
| March    | 70  | 41     | 36    | 164       | 27    | 18    | 107       | 3      | 3     | 16        | 5             |
| April    | 58  | 37     | 9     | 61        | 32    | 11    | 66        | 2      | 2     | 12        | 2             |
| May      |   |        |       |           |       |       |           |        |       |           |               |
| June     |   |        |       |           |       |       |           |        |       |           |               |
| July     | 66  | 26     | 11    | 52        | 42    | 5     | 25        | 0      | 0     | 0         | 2             |
| August   | 61  | 32     | 7     | 42        | 37    | 12    | 45        | 2      | 2     | 16        | 5             |
| Septem.  | 38  | 16     | 3     | 19        | 19    | 5     | 13        | 2      | 1     | 8         | 0             |
| October  | 40  | 32     | 6     | 40        | 10    | 3     | 15        | 1      | 1     | 6         | 2             |
| Novem.   | 84  | 53     | 13    | 81        | 41    | 21    | 102       | 1      | 1     | 8         | 8             |
| December | 75  | 45     | 14    | 82        | 41    | 17    | 98        | 1      | 1     | 4         | 5             |
| Totals - | 544   | 316    | 116   | 634       | 263   | 98    | 508       | 15     | 14    | 102       | 32            |

From this table it appears, that, exclusive of the more simple cases of fever, in which purga-

tives and diluents only were prescribed, there came under my observation in the course of the past year 544 patients, in whom the symptoms were more or less complicated. Of this number 316 had pectoral symptoms, for which 116 were bled from the arm, the total quantity taken being 634 ounces, or five and a half from each patient. In general the quantity directed to be drawn varied from four to six ounces: the same patient was seldom bled more than once, and very rarely was it necessary to bleed a third time. In 268 patients the head was affected, and 98 were bled from the temporal artery, the total number of ounces amounting to 508, giving an average of about five ounces from each patient.

It is of great importance in medicine that a question that bears so strongly on the treatment of fever, as the employment of general blood-letting, should be determined by an experience as extensive as possible, so as to lead to a more satisfactory conclusion than can be derived from results observed in a few cases merely. For this reason I have, with considerable trouble, drawn up the foregoing table; the number of cases which it embraces, the diversity of age, sex, and temperament, and the different seasons of the year to which it extends, all concurring to render it at least free from the objection of its being a



partial statement, obtained only under certain circumstances, to which it is exclusively adapted.

However, to shew more clearly the effects of moderate bleeding, it may be worth while to give a short account of all the deaths that occurred during the year among the patients in my wards, explaining the circumstances under which each death took place. From the history of these cases it will appear how few were the deaths in which it was possible to employ blood-letting in any shape; and by comparing the deaths in which bleeding was prescribed, with the total number of those patients who were blooded and who recovered, it will be easy to form an opinion as to the efficacy of small bleedings in relieving urgent symptoms, and bringing the disease to a favourable issue.

During the year, thirty-two deaths occurred under my observation, on each of which I now proceed to offer a few remarks, explaining, as briefly as possible, the nature of the disease, and of the treatment adopted.

## FEBRUARY.

1st, Sarah Costin, aged 45. Fever, with symptoms of pulmonary effusion. Pect. vesicat;—mist. pectoral. cum pulv. ipecac.—pil. ex subm. hydrarg.

et ipecac. āā, gr. ii. ter in die. Died after the second visit.

2nd, Mary Joice, aged 62. Great debility; pulmonary effusion and discharge of blood by stool. Haust. oleos. c. sp. terebinth.—mist. pectoral. et vesicat. sterno;—emulsio c. sp. terebinth. The hæmorrhage from the bowels was checked, but the tendency to effusion in the chest increasing, she died after the sixth visit.

3rd, Margaret Winford, aged 63, died of dropsy having continued in the hospital fifty-nine days.

### MARCH.

4th, Catherine Corcoran, aged 36. No very urgent symptoms, complaining only of a slight cough, and sore throat. Haust. oleos. et mist. pectoral. No change in the symptoms until the 8th visit, when the sensorium appeared much disturbed, and the disease had assumed the character of malignant typhus. Deglutition difficult. Abrad. capillit.;—faucibus extern. vesicat. Haust. oleos. mist. cum acid. muriat.;—spuma cerevisiæ. Ninth visit, much worse. Died.

5th, Thomas Farrell, aged 32. Fever, with cough. Haust. oleos. et mist. pectoral,—2nd visit. Venæsect. ad ʒv. Chest relieved; no urgent symptom



until the 6th visit, when his head became affected. Capite raso, nuchæ vesicat. Sang. ex art. temp. ad iv.—7th visit. Head still affected. Temp. hirudin. octo.—8th. Head not relieved, and cough had returned. Ex art. temp. sang. ad 5v.; Inter scap. vesicat. prope nucham.—11th. Worse; tremors and subsultus; involuntary motions, frequent and watery, with abdominal tension. Haust. oleos. c. sp. terebinth.;—vesp. enem. amyl. cum tinct. opii.—12th. Symptoms of effusion in the brain.—13. Evident marks of effusion in the chest; extremities cold, and disposed to gangrene. Died. The subm. hydrarg. and ipecac. pills were persevered in during the entire course of the disease without producing any effect on the system.

6th, John King, aged 11. Water in the brain, effusion having already taken place. Capiti vesicat; Haust. oleos.—subm. hydrarg. et pulv. antimon. āā, gran. quatuor, sextis horis. Died after the 3rd visit.

7th, James Tracy, aged 54. No urgent symptom; complained only of general debility; appetite good:—6th visit; had some scanty motions mixed with blood. Sumat sulphat. magnes. drach. duas, in juscule bovino tertiis horis ad tertiam vicem.—h. s. opii granum.—7th and 8th visits better; appetite good; no medicine ordered. 9th. Took a sudden change, being affected with

stupor and dyspnœa in the course of the previous evening and during the night. Was dying when visited.

8th, Ally Sherlock, aged 41. Confirmed phthisis. 1st visit. V.S. ad  $\text{℥}6$ ;—pect. vesicat;—tinct. digital.—3rd. Inter scap. vesicat.—18th. V. S. ad  $\text{℥}iv$ .—pect. vesicat.—22nd, Died.

#### APRIL.

9th, Hugh Davis, aged 30. Was admitted in Dec. and removed to the convalescent ward, labouring under a chronic disease; was attacked with symptoms of pneumonia on the 30th of March. V. S. ad  $\text{℥}v$ .—pect. vesicat;—mist. c. tinct. digital.;—pil. ex subm. hyd. et ipecac. ter in die. Same medicines continued, with the exception of blood-letting, for which no indication existed. Died on the 5th day of his relapse, having been eighty-two days in the hospital. Mouth was not affected.

10th, Mary Smith, aged 22. Pulmonary effusion, apparently moribund; difficult and laborious respiration. V. S. ad uncias tres;—pect. vesicat.;—mist. pectoral. c. sp. ammoniæ aromat.;—pil. sub. hydrarg. et ipecac.—3rd visit. Inter scap. vesicat.—4th. Extremities cold and black; chest not relieved; mouth not sore.—5th, Died.



## JULY.

11th, Nicholas Hornidge, aged 8. Died before visit.

12th. Mary Muldoon, aged 60. Not fever; age and debility. Her appetite continued until her death, and there was scarcely any symptom to indicate the use of medicine. An occasional purgative, and the decoction of bark acidulated with the muriatic acid, were the only remedies prescribed. Was sixteen days in the hospital.

## AUGUST.

13th, Catherine M'Caul, aged 50. Typhus fever. Fulness and tension of the abdomen, with dysenteric symptoms. The treatment first adopted consisted in the exhibition of purgatives, occasionally succeeded by opiate injections, which afforded relief. But the general exhaustion increased, the circulation in the extremities became nearly suspended, and the feet evinced a tendency to gangrene. Died after the 6th visit; the camphor mixture, wine, cordials, and frictions of the feet, with sp. terebinth, having all failed to excite the powers of the circulation.

14th, Michael Maguire, aged 46. Typhus gravior; admitted moribund; only once prescribed for.

15th, Thomas Neill, aged 60. Typhus gravior ; moribund ; only once prescribed for.

16th, Eliza Kelly, aged 20. Effusion in the chest, the effect of a local injury received previous to her admission. Had no fever, and her appetite for food continued to the last. Was ten days in the hospital.

17th, Jane Kennedy, aged 34. Complained of pain and soreness of the hypogastric region. Sub. hydrarg. gr. iv. statim,—post horas duas, haust. oleos. c. sp. terebinth.—2nd visit, pain removed ; no fever ; asked for food, and was placed on the hospital allowance. Continued convalescent until the 7th visit, when she relapsed, complaining principally of her head. Abrad. capillitium. Nuchæ applicet. vesicat.—ex art. temp. sang. ad uncias quatuor. Pil. subm. hyd. et ipecac. ter in die.—fotus pedum vesp.—8th visit, general marks of putrescency. Spuma cerevisiæ—mist. camph.—Reptr. pil. ex subm. hydrarg.—9th visit, marks of effusion in the ventricles of the brain. Subm. hyd. gr. tria, et pulv. antimon. gr. v. ter in die. Fronti et temporibus vesicat. Died convulsed.

## OCTOBER.

18th, Catherine Kelly, aged 44. Her head had been shaved, and she had been previously blistered between the shoulders, and blooded to ten



ounces. 1st visit, strength sinking, evident marks of effusion in the chest. Mist. camph.—pil. subm. hyd. et ipecac. ter in die.—2nd. Pil. ut heri, et pect. vesicat.—Mist. pectoral. c. sp. ammoniæ aromat. Symptoms not relieved. Died after the 4th visit.

19th, Mary Fielding, aged 27. No urgent symptom ; was ordered a purgative.—2nd visit, better ; no medicines.—3rd. Was yesterday apparently convalescent, and her colour natural ; tongue to-day loaded ; skin and eyes of a bright yellow ; breathing oppressed ; bowels slow ; pulse not to be felt ; extremities cold and purple ; has no pain. Subm. hyd. gr. iv. statim, dein, haust. oloes. c. sp. terebinth.—pect. vesicat. Fötus dextri hypochondrii, et frictio cum ol. camph.—℥. s. reptant. pilulæ—habeat vini uncias quatuor. Died.

## NOVEMBER.

20th, Teresa Anderson, aged 37. No urgent symptom ; would not admit that she was ill, or that it was necessary to take medicines. Petechiæ were present. The 1st and 2nd visits purgatives were ordered.—3rd, reported to have raved during the night ; pulse weak ; no increased pulsation at the temples, or mark of unusual action in the vessels of the head ; face pale ; features hollow and shrunk ; still objected to take medicines. Abrad. capillit.—Nuchæ vesicat.—Haust. oleos.—

Mist. camph. c. Liq. æther. oleoso. (Pharm. Dublin.) Pilulæ ex subm. hyd. et ipecac. Symptoms not relieved. Died after the 6th visit.

21st, Jane Reilly, aged 50. General dropsy. Subm. hyd. et pulv. scill. āā, gran. duo, et pulv. digital. gr. i. ter in die. Same medicines continued until the 5th visit, when, complaining of cough and of oppression of the chest, she was blistered in succession on the breast and between the shoulders. Died after the 8th visit from effusion in the lungs, the effect of the hydropic diathesis.

22nd, Teresa Butler, aged 32. Twice prescribed for, and sent over to the convalescent ward free from fever. Relapsed. First three visits purgatives were prescribed; on the fourth some delirium was observed. Temp. hirudines—nuchæ vesicat.—5th. Symptoms of putrescency. Mist. camph.—mist. c. acid. muriat. et spumâ cerevisiæ.—6th and 7th. Low muttering; delirium; no rest. Same remedies, and an anodyne at night.—8th, Pulse 140; head not relieved; no sleep. Died.

23rd, Ellen Corr, aged 80. Moribund; only once prescribed for.

24th, Eliza Dykes, aged 35. Fever; bowels slow; head not affected. Subm. hyd. gr. duo, et



postea haust. oleos.—2nd, Pil. ex subm. hyd. et ipecac. bis in die.—3rd, No marked change.—4th, Head affected; bowels slow. Haust. oleos.—abradat. capill.—temp. hirudines octo.—nuchæ vesicat.—h. s. haust. anodyn.—5th, worse; had no sleep; breathing laborious; symptoms of putrescency; strength sinking. Mist. camph. c. liq. Hoff.—spuma cerevisiæ.—pect. vesicat. Died.

25th, Catherine Fitzackerly, aged 60. Died before visit.

26th, Michael Daly, aged 50. Moribund; once prescribed for.

27th, Mary Kelly, aged 60.—1st visit, pulse 120; scarcely perceptible; skin and extremities cold and purple; tongue not foul; bowels free, having taken medicines previous to admission; petechiæ; sensorium not disturbed. Pil. ex subm. hyd. et ipecac. bis in die.—Mist. camph. c. liq. Hoff.—vini uncias sex.—2nd, Symptoms as yesterday; tongue clean, but dry. Mist. camph.—Mist. c. acid. muriatico—enema vesp.—vin. uncias octo.—3d, Pulse not improved; same remedies continued. Died after the 4th visit.

## DECEMBER.

28th, Thomas Grennan, aged 29. Moribund. Typhus gravior; great debility; pulmonary effu-

sion ; extremities cold and livid. Pectori vesicat. amplum et acre.—pil. ex subm. hyd. et ipecac. quater in die. Fetus abdominis et frictio ol. camph.—frictio manuum et pedum sp. terebinth.—Mist. pectoral. cum ipecac. et sp. ammoniæ aromat. enem. foetid. vesp.—habeat. vini  $\text{℥}8$ . Died.

29th, James Munday, aged 41. Typhus gravior ; great debility ; head and chest affected ; bowels slow ; pain and fullness of the abdomen. Subm. hyd. gr. ii. dein haust. oleos. c. sp. terebinthinæ. Abrad. capillitium. Nuchæ prope scapulas vesicat. Solutio antimon. tartarizat. ut expectorans—vini  $\text{℥}iv$ —2d, bowels sufficiently freed ; symptoms not improved ; head affected, and symptoms of approaching effusion in the chest. Pil. ex subm. hyd. et ipecac. quater in die. Fetus abdominis et frictio ol. camph.—pectori vesicat. mist. expectorans ut heri.—ex art. temp. sang. ad  $\text{℥}iv$ .—vini  $\text{℥}vi$ . Died. As this and the preceding case, in their symptoms, and in the treatment adopted, afford sufficiently accurate examples of the nature and treatment of cases 14, 15, 23, 26, 30, and of a great proportion of the cases which terminate fatally in the hospital from typhus fever in its more aggravated forms, I have copied at full length from my journal the remedies prescribed for them.

30th, Edward Hanvey, aged 40. A relapse.



Nose and extremities quite cold and purple. Died soon after admission.

31st, Mary Dowling, aged 17.—1st visit, delirium; pain of head; cough; pulse 120; bowels free. *Abrad. capillit.—ex art. temp. sang. ad 3v. Pil. ex subm. hyd. et ipecac. bis in die. Fetus abdominis et frictio ol. camph. enem. foetid. vesp. mist. pectoral.*—2nd visit, delirium continues; no sleep; breathing laborious; cough; pulse 120, weak and intermitting; tremors and subsultus; nose purple. *Nuchæ prope scap. vesicat. acre. Pilulæ ter in die. Mist. pectoral.* Died.

32th, Henry Shea, aged 58. Fever with pulmonary effusion; bowels slow. *Haust. oleos.—Mist. pectoral. Pectori vesicat. Pilulæ ex subm. hyd. et ipecac.* Died after the 2nd visit.

Of the above 32 cases, eight were bled from the arm or temporal artery. At the same time it is right to observe, and indeed it is evident, even from the concise description which I have given of each case, that in several instances blood-letting was practised under circumstances where no ultimate advantage could be expected to follow, and when it was employed with scarcely any other hope than that of affording temporary relief. Two patients died of confirmed dropsy, and one of phthisis; some soon after admission, and several

after having been only twice prescribed for. Cases of this kind, in which dissolution so soon took place, it is probable could not have experienced relief from any treatment. The final event, it is obvious, was determined previous to their admission, and the utmost that remained for the physician was, perhaps, to soften the approach of death. When the powers of the constitution had not been entirely broken down by age, privations, or previous disease, and when it was possible to prolong life, by relieving the more urgent symptoms, recovery in general took place. Were it not inconsistent with the plan which I have adopted, of giving the history of those cases only that terminated fatally, I could adduce numbers in which the symptoms were, to all appearance, as formidable as in many of those which I have described, and which, notwithstanding, recovered, under a mode of practice founded on the same principles, and, allowing for the peculiarities of distinct patients, similar to that pursued in the cases of those who died. In confining my remarks to the cases of fatal termination, I shall however give a general view of the practice which, in very many similar instances, has been employed with success.

In the 1st, 2d, 10th, 18th, 28th, 29th, and 32d cases, the most marked symptoms were those of pulmonary effusion, which had already commenced, and had made considerable progress in inter-



rupting the functions of respiration. This state of the lungs, though commonly the consequence of inflammation, is not essentially inflammatory;—at least it does not possess any decided and strongly marked character of inflammation, nor can it be successfully treated by those means which are known to be the most powerful in subduing active inflammation. In this state of the lungs, the bronchial cells are filled with mucus or phlegm, poured into them by the secretory and exhalent vessels of the inner membrane of the trachea, throughout its various ramifications; or this state may, and does sometimes, depend on an engorgement, or tumid condition of the sanguineous capillaries, which from paralysis become inactive, and hence, unable to propel the blood, are distended so as to compress the bronchial cells, thus preventing the admission of air so necessary to perfect the process of sanguification.

As this condition depends on a relaxed and debilitated state of the vessels, theory teaches, and experience confirms, the truth of the position, that when there is no arterial reaction present, general blood-letting is not calculated to effect a cure. Sometimes indeed, when the respiration has become most laborious, and the lungs are almost completely obstructed either by accumulated blood, or by viscid mucus, venesection must be performed to preserve the patient from suffo-

cation ;—but still it should always be remembered, that the object of blood-letting is only to afford temporary relief, until the vessels, by recovering their usual energy, shall be enabled to maintain the balance of the circulation. If large quantities of blood are taken from a patient in this state, effusion goes on more rapidly, and the fatal termination is of course accelerated. In such cases active purgatives are inadmissible, and for the same reason that blood-letting is objectionable. The treatment, therefore, must be regulated with a cautious attention to all those circumstances, and we must by other means endeavour to preserve the lungs in the exercise of their functions. A principal object always must be, to remove the mucus poured into the bronchiæ, for if allowed to accumulate, it will render the cells impervious to air, and thus destroy life. This is to be effected by expectorants given to an extent sufficient to produce not merely nausea, but retching. Those of the vegetable kingdom are the most safe, and the most efficacious. The inhalation of the vapour either of plain water, or of water mixed with vinegar or ether, sometimes affords great relief, and should be used when the debility of the patient is not such as to prevent its employment.

Blisters are to be applied in succession to the chest, and from the commencement small doses of calomel and ipecacuanha should be given at



short intervals, and continued with very little interruption, until the symptoms shall appear to have yielded. This they will almost uniformly be found to do the moment the system is under the influence of the mercury. In those cases which die, this is not effected in sufficient time to arrest the progress of the disease, the symptoms of effusion being in some too rapid, and in others the constitution not being easily brought under the mercurial influence.

Of the other remedies which we may find it necessary to prescribe in the course of the disease, digitalis, ammonia in the form of carbonate, or of the aromatic spirit, and sometimes cordials, are the principal.

In selecting from amongst them, and in determining on the proper period and mode of administering them, the physician must be guided by his previous experience, and by the application of general principles adapted to the peculiar symptoms of each particular case.

Having in the second volume of our Transactions explained what appears to me to be the mode in which mercury and digitalis act, and endeavoured to point out the circumstances which would seem to indicate their use, I shall at present only refer to that paper,

and proceed to offer some remarks on the practice of large bleedings in the treatment of pneumonia in its acute form, when combined with continued fever. In my former Report I stated, that, when contagious fever was complicated with acute inflammation of the lungs, the cure was effected more safely, and with equal certainty, by moderate bleedings, assisted by other remedies, than when attempted to be accomplished by copious venesection, the pernicious consequences of which I had occasionally witnessed.

Whatever additional experience I may have acquired since that period has confirmed me in my former opinion. From the table in page 407, it appeared that 116 patients were blooded for pulmonary affections. Of this number four, viz. cases 5, 8, 9, and 10, died; but from a perusal of their several cases, it will be seen whether copious bleeding could have been practised, and whether it was not in fact carried to an extent in every instance, as far as was either necessary or prudent.

In case the fifth the pulmonary affection was not urgent. Had it been severe the patient would have been blooded on the first, instead of the second day, after his admission; and had the symptoms not been relieved, it would have been repeated. The brain, in this case, was the organ principally engaged, and to the destructive



changes to which it was exposed, the death of the patient is to be ascribed. The symptoms of pulmonary effusion that presented themselves on the 13th visit appear to have been a consequence of the protracted state of the disease, and of the atony of the pulmonary organs, produced by the approach of death, and by their previous state of excitement. I have thus minutely referred to this case, as there might possibly be some difference of opinion concerning it; but in none of the others would any physician of the most limited experience think of bleeding largely. In case the 9th, death was the result more of a general failure of the powers of life, than of the violence of the pulmonary attack, the most urgent symptoms of which yielded to a single bleeding, and immediately passed into those denoting effusion, a condition in which, as I have already explained, venesection is seldom admissible.

If then moderate venesection will, in a great proportion of cases, bring the disease to a favourable issue, I cannot perceive on what principle it is contended that we ought to bleed copiously. It will not, surely, be affirmed by the advocates for copious depletion, that their plan will *always* prove successful, or that cases such as I have described would have recovered had they been bled at once to an extent of from twenty to forty ounces. To those who have an opportunity

of witnessing such cases, every day's experience proves the contrary. It is true there may occasionally occur instances of persons who have been bled with impunity to a great extent, and who have recovered ; yet their cases can be contrasted with others who, more cautiously treated, were found to recover equally well, and without incurring the same risk.

That large bleedings are by no means necessary, or even proper, in the treatment of pneumonia, when combined with continued fever, is an opinion entertained by some of the first medical authorities. Sydenham, who studied diseases and investigated their treatment with a degree of talent rarely equalled, and certainly never excelled by any physician in any age or country, thus expresses himself in his fifth chapter, where he treats of the “ *Epidemic Catarrh of the year 1675, with pleuritis and peripneumonia supervening.*” “ Censeo quidem *Pleuresin* Veram atque *essentialem*, quæ, ut posthac dicetur, omnibus annorum omnium constitutionibus indifferenter infestat, omnibus indifferenter annis venæsectionem pariter repetitam indicare ; aliquando tamen accidere ut febris ejus anni proprie Epidemica, a repentinâ aliquâ manifestarum aëris qualitatum alteratione, materiam morbificam in pleuram aut pulmones libentur deponat, ipsaque febris nihilominus eadem prorsus maneat. In hoc



casu, etsi venæsectio possit concedi ut huic symptomati, si multum sæviat, occurratur; generaliter tamen si loquamur, non multo plus sanguinis symptomatis ratione educendus est, quam febris nomine debuerat educi, a quâ pendet istud symptoma. Namque si hæc ejus sit indolis ut a repetitâ venæsectione non abhorreat, potest ea repeti in pleuritide quæ ejusdem symptoma est; at vero si febris repetitam venæsectionem respuat neque juvebit ista imò et nocebit in pluritide, quæ cum febre stabit cadétve.”\*

Several of my colleagues, whose opinions on all practical subjects deserve the utmost respect, entertain sentiments precisely similar. Doctor Barker, in his excellent Report for last year, has observed, that the congestions which occur in typhus fever differ from those of genuine inflammation. Doctor O'Brien also, in his Report of the Sick-poor Institution, speaking even of idiopathic pneumonia, makes the following remark: “It often happens that persons of lax fibre and delicate constitution are attacked with pneumonia, and in such persons effusion into the cavities of the chest, or the air cells of the lungs, very rapidly takes place, unless blood-letting be immediately resorted to: when cases of this kind occur, and they are unfortunately

\* Page 210, edit. tertia.

very frequent, blood-letting will never afford any thing but temporary relief to the symptoms, which will generally occur again with aggravated violence. This arises from the debility produced by venesection inducing a further laxity of the exhalents, and favouring that effusion which has already commenced.”\*

Sydenham, in the treatment of the *True* or *Essential* pleuritis, to which he alludes in the passage that I have quoted from his writings, does not by any means recommend large bleedings. He says, “*Quamobrem in venæsectione spem ponens maximam, ut primum accersor, sanguinem e brachio lateris affecti ad uncias decem aut circiter mittendum curo.*”† He then proceeds to observe, that when the pain and other symptoms are *very* violent, this quantity (ten ounces) is to be taken on four successive days, unless the patient shall previously become convalescent. But if the disease is less violent, or attended with less danger, or if the strength of the patient will not easily bear the effects of bleedings repeated at such short intervals, having been twice blooded, he is not afterwards to be bled until one or two days shall have intervened. He remarks that, in general, forty ounces of blood must be taken

\* Transactions of the College, 2d. vol. page 465.

† Ibid. page 229.



to cure a confirmed pleurisy, although in young persons two, and sometimes even a single bleeding will be sufficient.

Hence we learn, that the practice adopted by Sydenham was not to arrest the disease at once by an active and dangerous interference, but to observe symptoms, watch their progress, and regulate the treatment accordingly. When we consider that in the treatment of this disease neither blisters, digitalis, mercurial preparations, or purgatives were employed by Sydenham, and that his pectoral remedies were rather demulcents than expectorants, it is easy to conceive how physicians of the present day, by whom all these means are used in addition to that of blood-letting, can with equal certainty cure the disease at the expense of much less blood than must be taken when the principal dependance is placed on blood-letting alone.

When a patient is admitted labouring under fever attended with cough, pain of the chest increased by coughing, and preventing a full inspiration, I find it quite sufficient to bleed him to the extent of six or eight ounces, directing a blister to the part affected, and a cathartic; ordering, at the same time, the inhalation of the vapour of warm water, and a mixture consisting of the oxymel of squills, the acetate of ammonia,

and the tincture of digitalis, in such proportions as that two or three grains of ipecacuanha, and ten or twelve drops of the tincture, may be taken every third hour. The following day the pectoral mixture is continued, and small doses of calomel and ipecacuanha prescribed. In almost every instance these remedies will procure a remission of the symptoms, and it will seldom be necessary to repeat the bleeding, a perseverance in the other means proving quite sufficient to complete the cure of the pulmonary affection.

I have frequently observed that the abstraction of blood, in this way, has not appeared to give immediate relief, and that at the approach of the evening exacerbation, the symptoms seemed nearly as distressing and as violent as if no remedy had been prescribed. In cases of this kind Sydenham used to repeat the bleeding on the same day, and I by no means assert that it may not sometimes be necessary to do so ; but I state from my own experience, that in a great proportion of such instances it may be dispensed with. The operation of bleeding, the irritation of the blister, and the effects of the medicines prescribed, concurring with the evening paroxysm to exasperate the symptoms for the time, but after these causes of irritation have ceased an evident remission takes place, and the patient appears on the following day considerably better.



The period of the disease, and the presence or the absence of the expectoration, or the appearance of the expectorated matter, whether thin or viscid, or dense, and whether tinged with blood or not, are indications on which we should place little dependance. Whatever they may be, the state of the respiration, and more particularly the tightness and sense of pain occasioned by an attempt to make a full inspiration, will be sufficient to point out the propriety of blood-letting, as well as of repeating it, should it be necessary to do so. In cases of doubt, and cases will occur when the most experienced practitioner will hesitate, I am more disposed to bleed than to omit it; for while a small bleeding may be of the greatest advantage, it will seldom be found to do mischief.

I have discussed this subject at some length, because in the London Medical and Physical Journal for Nov. 1818, in which my former Report was noticed, it is observed, that "Dr. Grattan is disposed to be very cautious in the use of blood-letting in pneumonia accompanied with typhus fever. 'A single copious bleeding,' he states, 'has been productive of rapid effusion into the chest, or caused the fever to change from the inflammatory or bilious type, to that of a putrid and malignant form.' We consider such consequences more likely to ensue from the want of having recourse to it in the early stages of the

disease, and that a single copious blood-letting at that period, is more beneficial than the abstraction of eight or ten ounces twice or thrice repeated, as recommended by the author."

As any opinions promulgated in a work of such celebrity and extensive circulation are entitled to respect, and as the writer's remarks are obviously the result of a liberal mind, and of one disposed to encourage inquiry, I have stated as fully as was consistent with the object of this Report, the reasons which induce me to differ in opinion with him. Perhaps, however, there is not as great a discordance between us, either in point of theory or practice, as may at first sight appear; for although I do not allow its necessity, yet I admit that, in the young, plethoric, well fed, and previously healthy patient, a large bleeding may sometimes be permitted. On the other hand, I am convinced, that were he to prescribe in such cases as those which I have described, he would feel great reluctance in taking more than a few ounces of blood, seeing that such quantity was sufficient to accomplish every useful purpose; and aware that, in weak exhausted patients, in patients worn out with age, or broken down by privations, or by previous disease, a "single copious blood-letting" would only accelerate death.

In cases 4, 17, 20, 22, and 31, the sensorium



was the seat of the disease ; in those cases at least, the brain seemed to be the organ most seriously affected, and it would appear that the derangement of its functions occasioned the patient's death. In the first of these cases it is remarkable, that no very serious symptom presented itself until the 9th visit. At that period there existed no increased action of the vessels of the head to indicate the employment of blood-letting. The rapidity with which the fatal event followed the first appearance of this state of the brain, is also worthy of notice. In cases 17 and 31 the propriety of taking blood from the temples was obvious, and pointed out by the pain of the head, more particularly in the latter case, where it was attended with delirium. Case 20 is also interesting, and confirms the observation, that, in typhus fever, a patient is to be considered in danger when, though evidently labouring under disease, he contends that he is quite well, or affirms that he has slept, although we are satisfied that he has had no rest. This apparent want of consciousness, this insensibility to their own feelings and internal sensations, is always alarming, and should render the physician more assiduous in his inquiries, and more guarded in his prognosis.

The particular condition of the system on which this state depends, I believe is not always confined to the brain alone. I remember to have

seen a patient who, having through some accident received a blow on his chest, was seized with slight febrile symptoms, and was said to talk at times incoherently. He was dressed and walking about, complained neither of his head nor of his chest, and there, in fact, appeared no symptom to indicate immediate danger. His friends wished to have him removed to the hospital, and an order was given for his admission. He was not removed, and, on inquiring the next day, I was surprised to learn, that he had died in about an hour after I had seen him. In such a case, what treatment could have been of use? At that stage of the disease bleeding could not be employed with any possible advantage. Effusion had already taken place in the chest, and to this cause, and not to the state of the brain, I think the delirium should be ascribed.

In all cases where the sensorium is affected, the head should be shaved; if there is an increase of heat it should be washed with tepid vinegar and water, so as to preserve the head moist, and increase evaporation. When there is delirium, with a flushed countenance, and unusual throbbing of the temples, or pain of the head, (although without delirium,) the temporal artery should be opened, five or six ounces of blood taken, and a blister applied to the occiput and nape. In the low delirium, unattended with pain of the head, or



fullness at the temples, and when the heat of the forehead is not increased, when the face is pale, and the features hollow and contracted, I have been occasionally tempted to try the effects of blood-letting, but I confess I have not found it to answer. In such cases as 4, 20, and 24, of which the two first were not blooded, and in the last of which leeches only were applied, I am not clear that blood-letting is likely to be of use. In many similar instances I have witnessed the recovery of patients under a treatment very different from that of the depleting system. Wine and other stimulants moderately given, camphor, barm, and the acid mixture, gentle aperients, but by no means active or drastic purgatives, successive blisters, and calomel, with a view to affect the system, will often rescue our patient from impending death. However, it will sometimes happen, that when stimulants are required to support the general tone of the vascular system, moderate topical blood-letting may be highly judicious, and even necessary to relieve local congestion. Thus, there are cases in which it will be proper both to bleed from the temples and to give wine, a mode of practice neither as incongruous with itself, nor as inconsistent with a rational theory of the disease as might at first sight appear.

When the head and chest are both affected, it may seem difficult to decide for what set of symp-

toms we should prescribe, and to which we should direct our chief attention. To some it might appear, that the remedies proper for the cerebral were incompatible with those pointed out by the nature and violence of the pulmonary derangement. When a patient labours under pleuritis, the effect perhaps of exposure to cold or wet, it might be thought that to have the head shaved and washed would increase the danger, and exasperate the pulmonary symptoms. It might be considered doubtful whether we should bleed from the head or from the arm, or from both ; and, in short, much uncertainty may exist as to what principles should regulate our practice in the treatment of symptoms so complicated. It is of great importance that, in cases so embarrassing, we should be able to form a prompt and safe decision. Such cases frequently occur more particularly among that class of persons who apply for hospital relief, and who, from the nature of their occupations, are exposed to vicissitudes of heat and cold. When rightly managed, their mortality is, however, less considerable than might be supposed, both kinds of symptoms yielding in general to a cautious use, and judicious combination, of the remedies proper for each.

In all such instances the head should be shaved without hesitation, as the apprehension of its proving injurious in any way is totally without



foundation. Should the delirium be considerable, blood must be taken from the head by opening the temporal artery, and a blister applied between the shoulders, and to the nape. A purgative, and the diaphoretic and expectorating mixture, with the tincture of digitalis, must also be ordered. If, however, the pectoral affection shall appear to predominate, the bleeding is then to be practised from the arm, directing, at the same time, the other remedies precisely as in the former case. When both sets of symptoms are so nearly balanced, that it is not easy to determine which are the most urgent, I am inclined to think, from what I have observed, that we should direct our attention, in the first instance, to the head, the derangement of the brain proving more immediately fatal, and being less under our control than that of the organs of respiration.

When the head is affected I have always found that more decided and immediate relief was obtained by taking five or six ounces of blood from the temple, than by the abstraction of a much larger quantity from the arm; but I am not satisfied that when the chest is also attacked, the opening of the temporal artery may not often prove as beneficial as venesection. I have in my recollection several instances in which the head and chest were both engaged, and in which arteriotomy was alone sufficient to remove all the symp-

toms, and render further bleeding unnecessary. One case was very remarkable, as the symptoms were extremely violent, and the pulse was more frequent than I ever counted it in any patient before or since. The patient, a female, aged 29, was first prescribed for on the 12th day of her illness. The most urgent symptoms were delirium, face flushed, eyes red, skin hot, violent and distressing cough without expectoration ; pulse 134, and weak. She had not previously taken any medicines. By bleeding from the temple to five ounces, and in other respects pursuing the treatment already pointed out, the delirium was subdued, and at the next visit the eyes had resumed their usual clearness. Sleep was procured, and the pulmonary symptoms seemed much relieved. The following day her eyes again appeared red and suffused ; the tongue was dry and brown ; the pulse 160, small and regular ; the breathing easy, and she was stated to have had some sleep during the night : a small quantity of wine was ordered. At the fifth visit the pulse had fallen to 108, and on the 8th, or 20th day of her illness, she was convalescent. Had this patient been bled a second time from the temples, or lost 14 or 20 ounces of blood from the arm in the commencement, I think it probable she would not have recovered.

When the state of the patient is such as to in-



dicating the employment of blood-letting, either from the arm or temple, the symptoms of putrescency, or those of apparent debility, or even the protracted period of the disease, should not deter us from directing it. Formerly it was supposed, that any of these, and more particularly those denoting the existence of putrescency, were altogether incompatible with the use of blood-letting in fever. Such fears are groundless, and it will be found that all these symptoms will often quickly disappear after the use of those very remedies which were once considered likely to exasperate them. The dry black tongue, stupor, or low incoherent muttering, tremors, subsultus, petechiæ, or involuntary discharges, are not necessarily to contraindicate the use of venesection. Their presence will, of course, render the physician more cautious, and induce him to consider with attention the different indications according to which he is to regulate his treatment. Moderate bleeding may, in general, be safely used, while large bleedings will as certainly prove injurious. In case 31 it might seem questionable to some, whether the abstraction of even five ounces from the temple did not hasten the fatal event. The nose in this case appeared purple at the second visit, and the delirium had not been relieved. At the same time, it is to be observed, that, in treating a case with precisely similar symptoms, we should not hesitate to direct the

opening of the temporal artery. Sometimes even a moderate bleeding failing to produce the expected relief may appear injurious, and may be followed by symptoms of increased malignity. But though the remedy may sometimes fail, and it would be strange if it were always to succeed, we should not balance one failure against several instances of success, and therefore infer, that the treatment was either unnecessary or injurious. Even in desperate cases, something must be tried; and cases to all appearance as desperate as this have recovered, and derived the most immediate and obvious benefit from similar treatment.

Where delirium prevails to a considerable extent, and no sleep has been procured, after the head has been shaved, the temporal artery opened once or twice, the nape blistered, and purgatives administered, and more particularly should it be near the close of the disease, opium must be administered in such quantity as to produce its full effect. Two or three nights spent in a state of restless delirium tend so much to exhaust the patient, to exasperate all the symptoms, and to produce effusion in the brain in consequence of such continued excitement, that persons who have been suffered to continue in this state for three successive nights almost uniformly die. An anodyne, with from twenty-five to thirty drops of the tincture of opium, and as many of the vinum



ipecacuanhæ, repeated every third or fourth hour until sleep is procured, will be found to produce a marked change for the better. After a few hours' tranquil sleep thus obtained, the patient will often at the next visit be found free from every alarming symptom, the wild expression of his countenance will have disappeared, and the convulsive tremors will have become less violent, or have entirely subsided. So far as regards the use of opium in such cases I have not observed that its employment was followed by any unpleasant effects; I am, however, in the habit of combining it with a diaphoretic, to prevent any injurious consequences which might be supposed likely to proceed from its narcotic properties. In directing opiates to such an extent as thirty drops, repeated every third hour until sleep is procured, it may appear that I venture upon rather large doses; but this will not often prove to be the case, for when the system has been prepared for it by the previous employment of blood-letting and purgatives, the first draught will, in general, be found to produce the desired effect. Should it fail, a second must be administered, and it becomes even more necessary in order to prevent the stimulant effects of the former. In some urgent cases I think I could, with confidence, ascribe the patient's recovery to the use of opium exhibited in this way, so as to produce its full effect. Unless there should appear an urgent necessity for

the repetition of the opiate, I do not in general order it on successive nights, as I find it better to afford some time for the efforts of nature to restore the system to the healthy exercise of its functions. In so doing, I only follow the plan which I pursue in the use of every other remedy in the treatment of fever, namely, that which has for its object the relief of urgent symptoms. In fever, if urgent symptoms are relieved as they appear, the patient must recover, the duration of the disease being limited to a certain period, beyond which the febrile action loses its influence, and ceases to exist. But if we endeavour to subdue fever at the very instant, by violent means, and while the febrile action maintains the ascendancy, unless we succeed in arresting it, it will often pursue its course with aggravated symptoms, and cause the patient to fall a sacrifice to our ill-judged and too officious interference.

In cases of the kind which I have described, mercury should be freely used. The moment the mouth is rendered sore the symptoms become less violent, and the patient thenceforth gradually recovers. To this rule there are, no doubt, exceptions, but it may in general be considered pretty certain, that recovery will take place when the mercury has once produced its specific effects. I have never tried it in the form of frictions, nor am I disposed to place much reliance on this



mode of administering it, as I ascribe its efficacy to its action on the chylopoietic viscera, and more particularly to its power of equalizing the circulation, and removing congestion in the hepatic system, with which the brain unquestionably sympathizes. Now, these objects are more likely to be effected when it is administered internally, than when taken up merely by the cutaneous absorbents, in which latter case its specific effects on the system only are produced. Another reason also for giving mercury by the mouth, instead of in the way of friction, is, that very often convalescence will take place before the system has been affected, and, therefore, to push it in every instance to that extent would not only be often unnecessary, but might sometimes even prove prejudicial, especially to persons of a delicate and irritable habit.

In case 31, in consequence of the determination to the head, a solution of tartarized antimony was ordered, not with an intention that it should act as an emetic, but with a view to determine to the surface, and thus relieve the internal congestion. When there appears to be a tendency to effusion in the brain, antimonials are said to be of use, and therefore the antimonial powder was ordered in case the sixth. In Doctor Barker's valuable Report it is stated, that "in some cases, where the patient's life appeared in imminent danger, in

consequence of apparent congestion in the brain, small doses of calomel given conjointly with antimonial powder, at short intervals of one or two hours, seemed to have produced a favourable result.”\* I have found that when there is much arterial action, and when the skin is hot and dry, and after venesection has been employed, antimonials are often efficacious in moderating urgent symptoms; but when the pulse is small and languid, the extremities cold, and marks of collapse have presented themselves, I do not consider them likely to be of use.† In both of the above cases I ordered them in larger doses, from the pressing urgency of the symptoms, but even in such doses they did not seem to produce any evident effect.

The mineral acids, barm, and camphor mixture, are remedies which should not be regarded as inert in the treatment of malignant fevers. I admit they are to be considered subordinate to other remedies, and that their employment is by no means to supersede the use of more active means, when such are indicated. There are, however, many cases where they will be found most valuable, and hence to decry them, or entirely reject them, would deprive us of resources which

\* See Transactions vol. 2, page 579.

† Consult on this subject, “Illustrations of the Power of Emetic Tartar,” by William Balfour, M. D.



we may occasionally employ with advantage. When the tongue is rough, dry, and black, and the teeth incrustated with a brown and adhesive crust, the muriatic acid and barm will prove highly useful. The former is valuable as a refrigerant and tonic, and is very often extremely grateful. The latter, by its antiseptic and laxative properties, will, when combined with the camphor mixture, prevent or correct many of the symptoms of putrescency.

When there exists pain of the abdomen, with fullness and tension, which will sometimes happen while the bowels at the same time appear rather free, (a state most apt to occur in fevers of a malignant type,) I know of no remedy more generally successful in relieving those symptoms than the spirits of turpentine added to the common oil draught. Were any additional testimony wanted to establish its efficacy, I can from my own experience state, that it has fully confirmed the expectations which I had previously formed as to its effects, from the favourable accounts given of it by others. In no instance has it produced strangury, or been attended with any unpleasant consequences. In case the 2nd it was ordered in the form of an emulsion, to act as a styptic, and check the symptoms of melæna, under which the patient laboured. In similar cases a two grain pill of the sulphate of zinc, three or four times a day, and succeeded by small doses of the sulphate

of magnesia, dissolved in the infusion of roses, will very often arrest the disease, a disease to which the aged and debilitated are extremely liable, and one which in fever greatly increases the danger, disposing the patient to relapse, and rendering the convalescence tedious. In this state of the system I cannot speak favourably of the effects of blood-letting, as a general remedy. When there are any marks of vascular excitement, or any grounds to suspect the presence of inflammation of the alimentary canal, it cannot, of course, be omitted; but as far as my observation goes, it is generally to be ascribed to a paralysis of the venous capillaries, in consequence of which they do not transmit the blood which accumulates in them, and hence oozes out from the surface of the mucous membrane.

In case the 19th the symptoms were very remarkable, and I particularly notice it, as affording a striking instance of the sudden and unexpected changes which the physician must be prepared to meet with in the course of his practice, and of the necessity of his forming at all times a cautious and guarded prognosis as to the final issue of a disease so formidable in its nature, and so uncertain in its progress, as fever. I have witnessed other cases in which the appearance of jaundice was as rapid and as unlooked for, but I could not perceive that the other symptoms were influenced



to any obvious extent by its presence. In the greater number recovery took place, and where death did occur, it was plainly to be ascribed to circumstances quite unconnected with the existence of the jaundice. It is not easy to explain the causes which thus suddenly occasion death, nor have I often found that *post mortem* researches were capable of throwing much light on these subjects. Sometimes no unusual appearance presents itself; and not unfrequently, what the *mere anatomist* would call a diseased appearance, is in fact the remote effect, and not the immediate cause, of the patient's death.

In drawing up this Report, from the limits to which I have been obliged to confine it, I cannot with propriety discuss many other subjects connected with medical practice. I have, however, attempted to give a general outline of the leading principles, which I consider the most likely to conduct us to the final attainment of the two great objects of our institution, the PREVENTION and the TREATMENT of contagious fever.

29, YORK-STREET,

June, 1819.

# MEDICAL REPORT

OF THE

## Fever Hospital

AND

HOUSE OF RECOVERY,

CORK-STREET, DUBLIN,

FOR THE YEAR ENDING 1st JANUARY, 1820.

BY JOHN O'BRIEN, M. D.

FELLOW AND CENSOR OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS  
IN IRELAND, &c. &c.

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THE origin of epidemic diseases has furnished a subject of controversy in all ages, which has eluded human sagacity, and embarrassed the science of medicine with one of its most perplexing problems. The origin and propagation of the plague, in particular, had been long ago proposed as a problem by Aristotle;\* to the philosophers of whose time, the anger of the gods

\* Aristot. problemat. Sect. 1. Lib. 4.



appeared the only possible solution of the difficulty. This indeed was the prevailing opinion in still more ancient and ruder times; we find the angry deity in Homer\* represented scattering his arrows armed with pestilence, the most fatal instrument of his vengeance, through the Grecian camp: It is surely a strong proof of the singular obscurity of the subject, that this opinion should be again advanced in the present times; and that some of our most ingenious modern writers on fever could devise no other explanation for the origin of contagious diseases.†

The three last years, it is well known, have been marked by the rise and decline of the most formidable epidemic fever which has visited Ireland nearly for a century. It afforded ample opportunity for studying the phenomena of epidemic diseases; its progress has been observed with attention, its history detailed with minuteness, and every collateral circumstance, which could elucidate the subject, collected with inductive accuracy; yet such is the difference of opinion which still prevails on the causes of the origin, and even the decline of the late epidemic, that this important

\* Homer, Lib. 1.

† Dr. Bancroft, and an able anonymous writer in the British Review, No. 26, attribute the origin of contagion directly to the Deity.

question appears yet far from being decided. The account of the late epidemic, notwithstanding, forms a historical record not less instructive to the physician, than the statesman and the moralist. The investigation of its causes embraces an extensive field of inquiry, which the limits assigned to the present Report preclude the possibility of touching on but slightly and incidentally. It requires not only an accurate examination of the physical agencies which operate in the production of disease in our climate, but also an analysis of the structure of society itself, political and moral, peculiar to this kingdom. It demands, in fine, a candid developement of all the natural and moral evils which have rendered the lower classes of this country the victims of poverty and disease, to a degree far beyond their more fortunate neighbours.

A more pleasing task devolves on the present reporter; namely, to trace the epidemic in its decline, and to announce its termination; both of which occurred in the year 1819, the period embraced by the present Report. By this happy event, in whose accomplishment the House of Recovery, Cork-street, enjoyed a conspicuous share; the benevolent objects proposed at the original foundation of the institution have been in a great degree fulfilled, its salutary agency in



mitigating and repressing contagious fever, and its value to the public, clearly demonstrated.

Our feelings of exultation doubtless would be still more pure, if, with the conclusion of the epidemic, we could also announce the total suppression of contagious fever, which, for an indefinite period of time, has been the chief destroyer of the poor of this country, and has aggravated incalculably the miseries incident to poverty and indigence. Such, however, unfortunately is not the case: the disease has merely returned to its usual average, and still exists, a permanent drawback on the population and happiness of this country.

The following table will exhibit the principal events of the hospital, for the year 1819.

TABLE of admissions, discharges, average of daily admissions, average of daily applications, deaths, and average of mortality, in the House of Recovery, Cork-street, from the 1st of January to 31st December, 1819, inclusive.

|          | ADMISSIONS. |          |        | Discharges. | Average of Daily Admissions. | Average of Daily Applications. | DEATHS. |          |        | Average of Mortality.    |
|----------|-------------|----------|--------|-------------|------------------------------|--------------------------------|---------|----------|--------|--------------------------|
|          | Males.      | Females. | Total. |             |                              |                                | Males.  | Females. | Total. |                          |
| January  | 277         | 320      | 597    | 596         | 19                           | 29                             | 20      | 12       | 32     | 1 in 19                  |
| February | 102         | 345      | 447    | 444         | 15                           | 19                             | 16      | 15       | 31     | 1 in 15                  |
| March    | 200         | 290      | 490    | 440         | 16                           | 19                             | 14      | 12       | 26     | 1 in 19                  |
| April    | 152         | 256      | 408    | 430         | 14                           | 15                             | 10      | 15       | 23     | 1 in 18                  |
| May      | 155         | 258      | 411    | 432         | 14                           | 14                             | 9       | 6        | 15     | 1 in 28                  |
| June     | 149         | 158      | 307    | 306         | 10                           | 12                             | 3       | 10       | 23     | 1 in 14                  |
| July     | 119         | 166      | 285    | 272         | 9                            | 11                             | 8       | 9        | 17     | 1 in 17                  |
| August   | 94          | 138      | 232    | 254         | 8                            | 8                              | 1       | 6        | 7      | 1 in 34                  |
| Septem.  | 77          | 102      | 179    | 177         | 5                            | 6                              | 5       | 7        | 12     | 1 in 15                  |
| October  | 56          | 115      | 171    | 148         | 5                            | 6                              | 5       | 8        | 13     | 1 in 14                  |
| Novem.   | 76          | 132      | 208    | 175         | 6                            | 8                              | 8       | 5        | 13     | 1 in 17                  |
| December | 57          | 129      | 186    | 166         | 6                            | 7                              | 6       | 8        | 14     | 1 in 14                  |
| Total -  | 1512        | 2409     | 3921   | 3840        | 10 $\frac{3}{4}$             | 13                             | 115     | 111      | 226    | 1 in 18 $\frac{29}{776}$ |

Proportion of Males to Females admitted, is as 100 to 151.

———— of Males to Females died, as 100 to 96, nearly.

It has been just now stated, that the decline of the epidemic took place in the year 1819; its commencement may be dated in the month of



March, after which the reduction in the admissions in all the Dublin hospitals proceeded steadily, until the disease had sunk even below its usual level in the latter end of September and beginning of October. Previously to this period the reduction had become so considerable and permanent, as to induce government to issue an order, that the different supernumerary hospitals should discontinue the admission of patients from the 5th of July, 1819; and that the permanent fever establishments should be reduced as nearly as possible to their former standard. In compliance with this order, the House of Recovery, Cork-street, was reduced from a complement of 260 beds to 180; and the hospitals of the House of Industry, from 729 to 171, and finally, on the closing of the Talbot Hospital, to 71.

Perhaps a more accurate view of the progress of the epidemic will be exhibited by enumerating the several hospitals appropriated to the reception of fever patients, in Dublin, with their extent of accommodation, and date of opening and closing, viz.

## TEMPORARY HOSPITALS.

| House of Industry.  |  |  | Patients. |
|---|--|--|-----------|
|   | Richmond General Penitentiary, opened Oct. 19, 1817, closed May 17, 1819, and contained..... |  | 571       |
|   | Whitworth Chronic Hospital, opened Sept. 3, 1817, closed Oct. 15, 1819, contained.....       |  | 38        |
|   | Buildings attached, contained.....   |  | 49        |
|   |  |  | <hr/> 658 |
| Sir Patrick Dunn's Hospital, opened Sept. 14, 1817, closed August 15, 1819, and contained ..... |  |  | 100       |
| Stevens's Hospital, opened April 5, 1818, closed Aug. 15, 1819, and contained .....             |  |  | 90        |
| Total,  |  |  | <hr/> 848 |

## PERMANENT FEVER HOSPITALS.

|   |            |
|---|------------|
| House of Recovery, Cork-street, contained... .. | 260        |
| Whitworth Fever Hospital, Drumcondra, .....     | 30         |
| Hardwicke Hospital, House of Industry.....      | 71         |
| General total,                                  | <hr/> 1209 |

The decline of the epidemic was accompanied by the following reductions in the House of Recovery, Cork-street. The middle building, containing eight wards and twenty-four patients, was closed May 11, 1819. Ground floor, new building, two wards, seventeen patients, closed June 4, 1819.

In the above account I have not included the



Talbot Fever Hospital, in James's-street, opened for the reception of 100 female patients, April 21, 1819, and closed March 25, 1820 ; because that hospital was established when the epidemic had considerably declined, as a substitute for the Richmond General Penitentiary, which was closed shortly after: On the closing of the Talbot Hospital, the Governors of the House of Recovery, Cork-street, enlarged the accommodations of the hospital from 180 to 200 beds. The present accommodation, therefore, for fever patients in Dublin, stands thus :—

|  | Patients. |
|--|-----------|
| Fever Hospital, Cork-street, .. .. .         | 200       |
| Hardwicke Hospital, House of Industry.....   | 71        |
| Whitworth Fever Hospital, Drumcondra .. .. . | 12        |
|  | <hr/>     |
|  | 283       |
|  | <hr/>     |

Of the wide diffusion and baleful effects of the epidemic, an estimate may be formed from the aggregate of admissions and deaths in all the Dublin fever hospitals; during its prevalence, from 31st August, 1817, to 1st of October, 1819, as exhibited in the following table :—

TABULAR VIEW of the total of admissions, deaths, average of daily admissions, and average of mortality, in all the Dublin fever hospitals, during the entire duration of the epidemic, divided into quarterly periods; extracted from the official returns made to government.

|  | Admis-<br>sions. | Deaths. | Average<br>of Daily<br>Admis-<br>sions. | Average<br>of Mortality. |
|--|------------------|---------|---|--------------------------|
| First Quarter, ending<br>Nov. 30th, 1817,    | 2752             | 168     | 30                                      | 1 in 16                  |
| Second do. ending<br>Feb. 28, 1818,          | 4344             | 288     | 48                                      | 1 in 15                  |
| Third do. ending May<br>31st, 1818,          | 5297             | 221     | 58                                      | 1 in 24                  |
| Fourth do. ending<br>Aug. 31st, 1818,        | 7377             | 226     | 80                                      | 1 in 32                  |
| Fifth do. ending Nov.<br>30th, 1818,         | 8611             | 350     | 94                                      | 1 in 22                  |
| Sixth do. ending Feb.<br>28th, 1819,         | 6870             | 365     | 76                                      | 1 in 19                  |
| Seventh ditto, ending<br>May 31st, 1819,     | 4347             | 239     | 47                                      | 1 in 18                  |
| Eighth ditto, ending<br>Aug. 31st, 1819,     | 1844             | 95      | 20                                      | 1 in 20                  |
| And one Month, end-<br>ing Sept. 30th, 1819, | 333              | 19      | 11                                      | 1 in 18                  |
| Total,                                       | 41775            | 1971    | 54                                      | 1 in 22 nearly           |

I have set down the first of October as the conclusion of the epidemic, because it was in this



month, as is apparent from the first table inserted above, that the admissions sunk to the lowest point. They afterwards gradually increased, and have not since, nor for some years before, been so low as in the month of October, 1819. If to the number specified in the table, we add those persons who, declining hospital relief, were attended by the physicians of dispensaries, and also persons of the better classes affected with the disease, it is probable that not less than 50,000\* persons, viz. more than a fourth part of the entire population,† had passed through the disease.

The mortality above stated has been happily less considerable than that of former epidemics, or even of the present epidemic in the sister kingdoms; but the miseries entailed on society

\* The whole number of fever cases registered at the Sick Poor Institution, Meath-street, which is the most extensive dispensary as to the number of applicants in Dublin, during the epidemic, between the dates above-mentioned, was 5918. It must be observed, however, that the greater number of these, probably three-fourths, were subsequently removed to fever hospitals, and appear again in the registries of the hospitals. On this account, and because I do not think that the fever prevailed to any great extent among the higher classes, I have estimated the gross number so low as 50,000.

† The population of Dublin is estimated by the Rev. Mr. Walsh at 190,000.

have been, notwithstanding, grievous and disastrous in the extreme. When the senior and labouring members of a poor family became affected with fever, the distress inflicted on the younger part, thus left destitute, can only be conceived by those who have witnessed such scenes. There is reason to fear that many unhappy persons of both sexes were driven into vice or crime, as their only refuge from the distresses of that calamitous period.

These evils must have been still more severely felt had not the humane measures of government, and the charitable exertions of private individuals, somewhat blunted their force:—to these exertions the public has been indebted for a considerable mitigation, if not for the total suppression of the epidemic. There can be no doubt whatever, but the extensive hospital accommodation provided by government, and the judicious and vigilant system of medical police,\* established in the year 1818, have been the principal, though I think not the sole agents, in the production of this happy event; and, perhaps, it is to be lamented that the system had not been allowed to continue in operation for a longer time. In a city where contagious fever always

\* For a full account of this, see the Report for 1818, by Dr. Grattan.



prevails to a great extent, some permanent system of medical police seems indispensably necessary for its complete suppression.

On the mode of propagation, and the contagious character of the epidemic, a considerable difference of opinion prevailed. Some physicians asserted that contagion or infection\* was the only essential element in its propagation, and that all other causes were merely disposing or auxiliary to its reception: others admitted the extensive influence of contagion, but maintained that other agents, as want, cold, fatigue, &c. may become generating causes of fever in themselves; and the scepticism of one or two individuals has gone so far, as to deny the existence of contagion altogether in the fevers of our climate. This last opinion is so singular, and so contrary to the general sense of mankind, that little attention has been deservedly paid to it. This question, in relation to the plague, it is well known has been lately fully investigated by a committee of the House of Commons, before whom the evidence for its contagious nature has been so decisive, as to set this question at rest. The arguments for

\* I use these two words synonymously: strictly speaking, contagious diseases are those communicated by contact alone, as psora, the venereal disease, &c.; but infectious diseases are those which may be communicated through the medium of the atmosphere, by morbid emanations from a diseased body, as fever, small-pox, &c. &c.

the dangerous and absurd opinion alluded to, have been precisely the same that have been repeated and refuted almost in every age. Whoever reads the works of Diemerbroeck and Mead, will find that modern ingenuity has added nothing to the arguments long since refuted by those learned writers. Of the other two opinions on the mode in which epidemic fever is propagated, although the difficulty of the subject scarcely warrants a positive, at least not a dogmatic conclusion, it appears to me, on the whole, that the phenomena of epidemics are best explained by that doctrine which supposes a two-fold origin, namely spontaneous and contagious, to the disease.

In the complicated intercourse of a populous city, where the population is necessarily dense and intermingled together, it is difficult to prove directly the spontaneous origin of fever ; but yet so many insulated cases of fever constantly occur, which the most accurate examination cannot trace to a contagious origin, that it appears altogether unphilosophical to assume as an exclusive cause, an hypothesis founded on vague and distant analogies. In the valuable Report for the year 1817-18, by Dr. Barker, it is stated that he made minute inquiry of ninety patients, taken without selection, in October, 1817, as to the causes of their illness, and that twenty-four



only could be traced to contagion. A similar inquiry was made by me in the months of February and March, in the present year, of forty-five patients, taken in succession as they entered the hospital, and twenty-one only were conscious of having been exposed to contagion, and some of those very doubtfully. Although we should admit that contagion in some instances operates so insensibly as to escape observation and inquiry, yet is it to be supposed, that a poison constantly floats around us, so occult and active as to infect three-fourths of those who labour under fever, as may be deduced from Dr. Barker's inquiry, without a possibility of detection? This can by no means be inferred from the phenomena of contagious fevers, to which a great part of mankind remain exposed, in close proximity, for a considerable time, with impunity; and if it were true, all mankind must ere now have been infected in rapid succession. The legitimate conclusion to be drawn from the facts above-mentioned appears to be, that certain other causes, as is clearly proved in the case of intermittent fever, exclusive of the contagious emanations from a diseased body, supposed by the contagionists to be the only elements of infection, are capable of generating contagious fever. In further confirmation of this opinion, it is unnecessary to apprise the medical reader, that the highest authorities in medicine, the ablest of the British

physicians, including the names of Willis, Mead, Sydenham, and Pringle, have supported the spontaneous origin of fever ; and I find that the writer on the article *contagion*, in that able French work, the *Dictionnaire de Sciences Medicales*, advocates the same opinion.

Admitting the validity of this doctrine, an interesting subject for inquiry here presents itself, namely, to determine the relative power of contagion in generating fever, compared with the other causes to which I ascribe what is called its spontaneous origin. Exclusive of the statements above-mentioned, the registry of this hospital affords some further illustrations of this subject. The regulations of the institution require that each patient should be visited, previously to admission, by one of the physicians, and that the number of persons previously ill in each house or apartment should be noted in the admission tickets. The practice of noting this circumstance, which had fallen into disuse during the pressure of the epidemic, has been again resumed in the present year, by order of the managing committee. On reference to the registry, therefore, it appears that of *five hundred and eighty-five* patients, admitted from the 16th of March to 16th May, 1820, *one hundred and seventy-seven* were admitted from infected houses ; that is, where one or more persons had been previously



ill of fever. It would appear by this statement, that a little more than one-third owed their fever to infection, and two-thirds to other causes, or were of spontaneous origin. But this calculation is obviously liable to so many sources of error, that it can be considered at best only as an approximation to truth;\* and I insert it rather as an object of curiosity, than for the purpose of drawing any precise inference.

That the late epidemic was highly contagious, the proofs furnished by the different reports, published by the physicians of this city, are too decisive to leave any doubt on the mind of an unprejudiced person.

Although not exclusively confined to the poor, on whom contagion must be supposed to exercise its chief dominion, from their state of aggregation in narrow unventilated apartments, yet they were affected in a much greater proportion, in my opinion, than might be inferred from the relative numbers of this class, compared with the other classes of the community. It has occurred to me, also, that those of the better classes who were affected in greatest numbers, or who fell

† It appears to me that, in epidemics, a majority of cases are of spontaneous origin, but in ordinary times, that the majority are to be attributed to contagion.

victims to the disease, were persons whose avocations in life rendered a frequent intercourse with the poorer classes necessary, as professional persons of every kind, lawyers, physicians, &c. also shopkeepers; and I do not recollect a single instance in the highest rank of society, in which this disease occurred, at least none in which it proved fatal.\*

The same thing has been observed in relation to the plague. It is stated by De Mertens, in his account of the plague of Moscow, that three persons only of rank died there of that disease, although a number amounting to the enormous sum of twelve hundred persons perished daily of the poorer classes. The great plague of London was so exclusively confined to the poor, that it was called the *poor's plague*.†

Although we should allow their full share of credit to human exertions in the suppression of the late epidemic, it still remains a question of importance, whether any other agencies co-operated in producing this effect. The regular periods, or revolutions, which epidemic diseases

\* Since writing the above I have been informed that one Nobleman, the Earl of Glengal, died of fever during the epidemic.—One of the judges also died on circuit.

† See Journal of the Plague.



observe their sudden and simultaneous rise and decline in far distant places—this decline, also, at a period when contagion, if a permanent principle, of equal activity at all times, ought from its multiplication to be most virulent—appear to point out an atmospheric agency, altogether independent of human control.

Thus we find the late epidemic had began to disappear nearly at the same time, in Dublin, Cork, Limerick, and Waterford. Dr. Barker, in his Report of the inspection of the Munster district, states, that a decrease had taken place in those cities about the month of March, which is the time in which a decrease commenced in Dublin. In Edinburgh\* and Glasgow, also, a decrease took place nearly about the same time. It may be remarked, as a further proof, that the system of medical police adopted in Dublin was three or four months in operation, before any material effect was produced. The definite periods observed by the plague in those countries it infests, afford an analogy strikingly illustrative of this subject. In Egypt, it appears, the plague regularly concludes its ravages on the 24th of June, about which period a heavy dew falls, and the inundation of the Nile commences. In Aleppo,

\* Edinburgh Medical Journals for Jan. 1820:

Dr. Russel states, that a remission of the plague usually takes place on the approach of winter.

In the plague of London, in 1665, the disease, which first appeared in the latter end of the year 1664, seemed to lie dormant during the winter, and broke out with fresh vigour in the ensuing spring and summer, and again was suppressed by the following winter; after which, it is stated by Dr. Hodges, so little precaution did the returning citizens observe, that in some instances they took possession of the beds previously occupied by their friends who had died of plague, and actually infected with the matter of pestilential sores, without having sustained any injury, or caught the infection. Those facts appear to me strongly to support the opinion of the old physicians, and particularly of Sydenham, that a certain constitution of the atmosphere \* is essentially necessary

\* I use the term atmosphere as expressing both atmospheric air and all its contents; solid, fluid, or gaseous. A strong objection certainly may be brought against the influence of the atmosphere in generating contagion, derived from the fact that the epidemic had continued through every change and variety of atmosphere unabated; but this argument will be equally valid against any cause, or combination of causes, which can be adduced. It has pursued its course through plenty as well as want, through genial as well as ungenial seasons, through houses even more cleanly and less crowded than in former years. That the sensible qualities of the atmosphere, however, are inadequate to explain the effects, must be admitted; and it necessarily follows, that we must



for the propagation and suppression of epidemic diseases.

In pointing out these circumstances, I am far from wishing to depreciate the active and humane exertions both of government and of private individuals for the suppression of the epidemic—exertions highly honourable to our times; and which at least, by lessening the aggregate of misery and poverty, must have removed some of the most powerful predisposing causes to fever, counteracted the epidemic constitution of the season, and circumscribed the number of its victims.

It is probable, indeed, that a combination of both moral and physical causes is necessary for the creation of epidemic fevers. They are accordingly observed to follow, with few exceptions, in the train of scarcity, public distress and famine. Of this fact, this country affords some striking examples. Previous to the late epidemic, which evidently succeeded the dearth of 1816-17, the greatest epidemic of which any record remains

ascribe them to qualities not cognisable by the senses. Whether these depend on its state of electricity, as is supposed by the writer of the article on fever in the *Edinburgh Review*, or upon exhalations from the earth, or other causes, it is impossible to determine; but it appears to me unreasonable to reject the opinion of the wisest physicians of ancient and modern times, namely, that the atmosphere exercises a powerful influence on the phenomena of epidemic diseases.

was that of 1740-1, after the great frost, which was succeeded by famine and pestilence to such an extent, that 80,000 persons are reported to have perished throughout Ireland, in that fatal year.\*

The sweating sickness, which prevailed in London in the year 1485, is supposed to have been introduced by the wretched and half-starved foreign soldiers of Henry the Seventh, before the battle of Bosworth. In the year 1801-2, immediately after the rebellion in Ireland, the scarcity which prevailed was succeeded by a great increase of fever, both in Cork and Dublin.

In the year 1815 also, in which a very considerable increase of fever took place in Dublin, although provisions were abundant, yet such was the distress of the poor, owing to want of employ-

\* By far the best account of the epidemic of 1740-1 has been given by Dr. O'Connel, a physician of Cork, at that period. The work is dedicated to his cotemporary, Dr. Mead, and written in very pure and classical Latin. He describes the effects of the epidemic in the following words:—"Hæc denique luctuosa et terribilis hominum strages, quæ pestem ipsam in hac regione olim grassantem, quoad demortuorum numerum non æquare tantum, sed etiam transcendere putatur. Cum annis 1740-1 octoginta ad minimum ægrorum millia prædictorum malorum occasione interiisse crediderim ipse, et a pluribus perspicacissimis viris, ad fatalem hunc eventum serio attendentibus, observatum noverim." *Observat. Medicinal.* p.327.



ment, that they could not purchase the necessities of life; hence an artificial scarcity was the consequence, with its usual attendant, fever, in its train. It appears, indeed, to be an invariable law of nature, that when human beings, scantily fed, are crowded together in filthy, unventilated situations, a fever always springs up to aggravate their other sufferings. The history of all vanquished and retreating armies, from those described by Thucydides and Livy, to the retreat from Moscow, in which vast numbers are recorded to have perished by fever,\* affords strong and decisive proofs of this proposition. To the causes above enumerated, in conjunction with crowded apartments, deficient ventilation, neglect of cleanliness, and all the other moral and physical evils by which the poor of this country are peculiarly afflicted, we must attribute the permanent, or, as it may be truly called, endemic fever of this country. These evils being, however, of a permanent nature, and suffering little fluctuation at different times, some other causes seem necessary to be superadded for the creation of an epidemic. In the winter of 1819, and beginning of the present year, the complaints of want of employment, owing to the stagnation of trade, were general, and the distress of the people was scarcely ex-

\* See Dictionnaire de Sciences Medic. article Fever; and Baron Larrey's Works, vol. 4.

ceeded by any former year; yet no increase of fever occurred. These considerations lead us inevitably to the conclusion, that the atmosphere exercises a powerful influence in the creation of epidemic diseases.

That contagious fever has been for a series of years the scourge of this country, owing to the permanency of the moral and physical evils above-mentioned, appears from the accounts of Drs. Rutty and Rogers, who have described the two formidable epidemics of the years 1731 and 1740-1. In Boate's Natural History of Ireland, also, a book written nearly two hundred years ago, we find the following passage:—"As Ireland is subject to most diseases in common with other countries, so there are some whereunto it is peculiarly obnoxious, being at all times so rife there, that they may be justly reputed for Ireland her *endemii morbi*."

"Of this sort is a certain sort of malignant fevers, vulgarly in Ireland called *Irish agues*, because that at all times they are so common in Ireland, as well among the natives as those who come there from other countries. This fever is commonly accompanied with great pain in the head, pains in the bones, great weakness, drought, loss of appetite, want of sleep, and, for the most part, idleness or raving, but no very great or con-



stant heat; it is hard to be cured, for those that seek to overcome it, do it not by purging, which cannot be used without much and present danger, and hardly with blood-letting, which seldom is used with success, unless in the very beginning, but with strengthening remedies and good cordials, in which case, and if all necessary prescriptions be strictly observed, very few persons do lose their lives, except on some years, when some extraordinary pestilential malignity come to it.”  
—*Boate's Natural History*, p. 96. Lond. 1658.

An opinion, considerably qualified it is true, has been expressed by Dr. Armstrong in the last edition of his valuable treatise on fever, that Typhus-fever is the product of a specific contagion, and that the common continued fever of this climate is never contagious. A similar opinion, I confess, was once entertained by me, and indeed published in the Report of this hospital for the year 1814; but a more extensive acquaintance with the disease, and the opportunities of observation afforded by the late epidemic, have induced me to alter that opinion, and impressed me with a belief, that all the varieties of fever may, under peculiar circumstances, become contagious.

I admit the inadequacy of Cullen's definition of *synochus*, and the absurdity of making it a compound of two other distinct diseases, but I

cannot help thinking he was right in attributing to it a contagious power.

A striking proof that the mildest form of fever may circulate by contagion, has been given by Dr. Percival in his account of a *febricula*, published in the first volume of the Dublin Hospital Reports; and some instances of a like nature have occurred to myself.

The greater part of the cases which appear in this hospital present themselves under the form of synochus. It is by far the most frequent aspect of the disease that occurs among the poor of this city, and I believe few physicians here entertain a doubt of its contagious nature. The *Typhus*, as defined by Dr. Cullen, is a disease of rare occurrence in this city, and the name is strictly applicable only to the advanced stages of fever, where debility or collapse succeeds to great excitement; even in those stages, it is seldom that the temperature is not above the natural, except at the extremities. That cases, however, of genuine Typhus, where the heat through the whole progress of the disease is even below the natural standard, do occasionally occur, is undeniable; but they appear to me to result from modifications of constitution, or other local circumstances; and are by no means the most dangerous forms of the disease. In fine, the opinion



entertained by Dr. Percival on this subject, appears to me highly probable, viz. that a close resemblance, or even an identity of character and laws, exists throughout this great class of diseases; and that their different aspects, both as to duration and intensity, arise from different modifications of age, constitution, or other local circumstances, independently of a specific character. Frequent instances have occurred within my knowledge where several different types of fever have been generated by the same contagion circulating through a family.

No part of the present received nosology appears so imperfect or objectionable as that of fever. Our ignorance of its essential nature, its diversity of form, and the different hypotheses proposed by authors on the subject, render it a work of extreme difficulty to form a classification which shall comprehend all theories. The term *Synocha* has been banished from the nosology of fever by modern writers, almost by common consent; and it is probable that one of the other two orders, *Synochus* and *Typhus*, will shortly share the same fate. It has been proposed by Dr. Percival to class the different varieties of this disease under one genus, *Typhus*, and to arrange the species according to intensity, as *mitissimus*, *mitis*, *gravis*, *gravior*, &c. Perhaps, if we combine two of the orders mentioned by Dr. Arm.

strong, viz. simple and inflammatory, with the above, it will afford the least objectionable arrangement, and that which comprehends best all the phenomena of fever.

The species of the second order, or Typhus inflammatorius, may, besides the terms which characterize intensity, be also distinguished by those which may point out the organ affected, as Typhus inflammatorius gastricus, cerebrialis, &c. The established use of the term Typhus, as only applicable to the more malignant and protracted types of fever, presents some difficulty in the way of this classification; and I cannot help thinking the term Synochus, from the more obvious application of its literal import to the fevers of this climate, preferable to Typhus, a term never used by the ablest of the British physicians, and one of modern application altogether to our fevers.

A theory indeed has been proposed by Dr. Clutterbuck, of London, and a few others, which, if well founded, must simplify the doctrine of fever, and compel us to place this disease among the Phlegmasiæ. Although I am unwilling to express a decided opinion upon a subject still under investigation, yet I cannot help declaring that the facts hitherto collected do not appear to me to countenance this theory. The arguments deduced from morbid anatomy in its favour, are



altogether unavailing, as the question is not whether inflammation has existed, but whether inflammation has been the cause of fever? Nothing, in fine, but a large collection of well authenticated cases, clearly proved of contagious origin, in which blood-letting effected a direct cure, can be admitted as evidence in this question; an evidence I think not afforded by the cases detailed in the late work of Dr. Clutterbuck.\*

In some late instances I have carried blood-letting to the utmost verge of prudence and safety—I mean, to an extent generally sufficient to effect a cure in the Phlegmasiæ, and I have never been able to effect more than a mitigation of the symptoms; which, no doubt, contributes to the cure, but not directly as in the Phlegmasiæ. The laws, in fine, of the Phlegmasiæ, or topical inflammations, are altogether different from those of simple fever, and Dr. Clutterbuck has attempted no explanation of intermittent †

\* A considerable difference exists between the opinions of Drs. Clutterbuck and Mills on the proximate cause of Typhus-fever; the former attributing it to inflammation of the brain only; the latter to inflammation of any of the internal viscera. These two gentlemen think inflammation the *cause*, most other modern writers the *consequence*, of fever.

† A very able article on this subject will be found in the London Medico-Chirurgical Journal, in the review of Dr. Clutterbuck's work, for July, 1819.

fever, which appears altogether inexplicable on his hypothesis.

It must not be inferred from the above, that I conceive inflammation never to occur, or to be a rare and casual adjunct to fever. So far from this, I am much in doubt whether fever ever exists without some degree of inflammation in one or other of the internal organs; that is, whether fever is ever strictly simple through its entire course. Of this inflammation there may be various degrees, but they, in general, appear to partake more of a passive than an active character, (although instances of the most acute forms occasionally occur,) and bespeak a debilitated, rather than a violently excited state of the vascular system, the consequence of which is, congestion of blood in the venous and arterial capillaries. The first train of symptoms appears to be nervous and sensorial, evinced by the depressed spirits, impaired understanding, and langour of the first stage;\* the second vascular and nervous, and this is the stage in which inflammation always

\* Some striking instances of this are given by Sir J. M'Gregor, in his Medical History of the Peninsular Campaigns:— he states, that for some days previous to the attack of fever, men of the most athletic frame expressed themselves as ready to cry, without any obvious cause.—*Med. Chirurg. Trans.* vol. vi.



supervenes. In a word, I cannot help agreeing with Dr. Armstrong, that inflammation is consecutive in the train of symptoms, a property or sequel, but not the essence of fever.

The evidence derived from morbid anatomy, to prove the existence of inflammation in Typhus-fever, seems dubious; some eminent anatomists, as Beddoes, and more recently Dr. Macartney,\* and Mr. Kirby of this city, asserting that no decisive marks of inflammation could be detected by them in persons who had died of Typhus-fever; whilst others, as Drs. Cheyne, Percival, and Crampton, who had a more extensive field of direct observation, as physicians to the fever hospitals of the House of Industry, declare that unequivocal traces of inflammation of the brain or viscera generally presented themselves in the numerous dissections which they were enabled to make at those institutions. A regulation of the Fever Hospital, Cork-street, which prohibits the opening of bodies after death, has limited the information of the physicians on this important subject; but from several dissections which I had an opportunity of making, in attending the Sick Poor Institution, Meath-street, and in private practice, I am disposed to agree with the

\* See Dr. Stoker's and Dr. Barker's Reports for the years 1816 and 1817.

last named gentlemen in their statement of the appearances which presented themselves on dissection after death from Typhus-fever.\*

A mere verbal distinction, at least one incapable of being determined in practice, appears to have been dwelt on, between inflammation and congestion. It seems hardly possible to conceive that congestion of any part of the venous system can exist for any length of time, without a similar congestion in the adjoining arterial capillaries, the conduits through which the congested veins receive their blood; and if we admit such a state of the vessels, it becomes a problem of no easy solution, to determine the difference between congestion of the arterial capillaries and inflammation;—in fact, they must be regarded as identical. It appears, therefore, that venous congestion is necessarily the precursor or sequel of inflammation; a fact sufficiently illustrated by the phenomena of hydrocephalus internus and some other diseases of the brain.

Thus then, the symptoms during life, the red inflamed eye, the flushed face, the delirium, rising sometimes to absolute frenzy, correspond with

\* These appearances are well described in Dr. Percival's last treatise on Fever, and in Dr. Crampton's Report of Stevens's Hospital.



the appearances after death, and offer an irresistible body of evidence for the existence of inflammation in most cases of Typhus-fever. I cannot forbear quoting here a passage from a work published nearly a century ago, by Dr. Rogers, a physician of Cork, as pretty nearly expressive of the opinion I have formed as to the cause of the leading and prominent symptoms of Typhus-fever, if we omit the old idea of the sily lentor of the juices :—" To account then, from the above principles, for the fixed, sullen pain of the head, so peculiar to fever, let it be observed that all pain is the genuine effect of obstruction, that obstruction in the present case is caused either by the sily lentor of the juices, or the relaxed spring of the vessels, the degree of obstruction is in a compound ratio of both. Under such circumstances a greater quantity of the juices will be accumulated in the capillary arteries than can readily be pushed forward, from the weakened tone of those vessels, from which will arise an over distention of the fibres of those vessels, the consequence of which will be pain. True it is, that the same effect may be, and frequently is, produced by quite a different cause, an increased spring of the vessels, by quickening the circulation and rarifying the juices in too great a degree, will at length bring on obstruction and pain. By this means too great a quantity will be driven into the small vessels, the fibres will be over-

stretched, and at length a partial stagnation ensue. But in this case the pain will be acute and violent, in the other, heavy, sullen, and dull."

The following table exhibits the ages of all the patients admitted into this hospital in the year 1819; and if compared with the table inserted in the Report for 1817, by Dr. Barker, will afford a comparative view of the epidemic, and of the ordinary fever, in relation to the ages most liable to infection.



TABLE, shewing the ages of all the patients admitted into the Fever Hospital, Cork-street, in the year 1816, from 1st January to 31st December, inclusive.

| Months.   | AGE<br>1 to 10 | AGE<br>10 to 20 | AGE<br>20 to 30 | AGE<br>30 to 40 | AGE<br>40 to 50 | AGE 50<br>and up-<br>wards. |
|-----------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------------------|
| January,  | 94             | 183             | 144             | 96              | 50              | 30                          |
| February, | 53             | 126             | 120             | 83              | 34              | 28                          |
| March,    | 50             | 164             | 122             | 84              | 42              | 31                          |
| April,    | 57             | 102             | 93              | 83              | 45              | 25                          |
| May,      | 49             | 105             | 121             | 60              | 40              | 36                          |
| June,     | 38             | 58              | 75              | 50              | 27              | 32                          |
| July,     | 29             | 76              | 81              | 39              | 40              | 20                          |
| August,   | 27             | 68              | 64              | 35              | 23              | 15                          |
| Sept.     | 12             | 57              | 47              | 27              | 20              | 16                          |
| October,  | 15             | 49              | 41              | 35              | 22              | 9                           |
| Nov.      | 26             | 52              | 48              | 44              | 22              | 16                          |
| Dec.      | 15             | 44              | 56              | 28              | 23              | 20                          |
| Total,    | 465            | 1111            | 1012            | 664             | 388             | 281                         |

Highest number, from ten to twenty years of age; next, from twenty to thirty.—It must not be forgotten, that these ages are also the most numerous in society.

The epidemic appeared to differ in no respect, as to its symptoms, from the common fever of

this country, exhibiting precisely those which have characterized the ordinary fever for many years. One intelligent writer has mentioned an efflorescence resembling that of measles, together with a purple colour of the extremities, as having been very prevalent at that period, and characteristic of the fever. These are appearances which present themselves at all times in cases of ordinary fever; and I cannot say that I have observed them more frequently during the epidemic than at other times, in relation to the total number of patients.

Dr. Rogers, so far back as the year 1731, describes this form of petechiæ as characteristic of the fever which generally prevails in Cork; and Dr. Barry, in his excellent Report of the Cork Fever Hospital, for the year 1817, expresses his decided opinion, that the epidemic differed in no respect, but extent and rapidity of diffusion, from the common endemic. Purple, and even gangrenous extremities are also occasionally observed at all times, and generally occur previous to admission into hospital, from filth, neglect, and the absence of every comfort. Though I have been fortunate enough to meet very few cases of purple, and no case of gangrenous extremities during the epidemic, yet I can conceive they must have been more frequent at that time, when the crowded state of the hospital rendered it impossible, in



many instances, to admit patients on their first application. Others, through ignorance and carelessness, deferred the application too long, until this formidable symptom became irremediable.

This symptom is comparatively rare, but ulceration and gangrene of the hips, nates, and sacrum, are symptoms of very frequent occurrence at all times, few of the malignant and protracted types of fever being exempt from them. This unfortunate occurrence, which not only retards convalescence in a painful manner, but has been, in several instances, the cause of death, is partly to be attributed to the loose palliasses or straw beds unavoidably employed in the hospital, but will occasionally occur under the most favourable circumstances. When the patient lies in a state of insensibility, and fæces and urine flow involuntarily, nothing but the most vigilant attention on the part of the nurse-tenders can prevent this painful accident. A bed, contrived on an ingenious and simple construction, has been recommended by Dr. Heberden, in the 5th volume of the Transactions of the London College of Physicians, for bed-ridden persons; and I cannot help thinking, that beds on a similar construction might be easily contrived for persons in a state of insensibility in fever, and would be a very useful addition to the furniture of fever hospitals.

The petechial eruption, which prevailed most in the year 1819, and beginning of the present year, was that variety consisting of light copper-coloured maculæ, without any definite size or form, sometimes round, sometimes spread out in irregular patches. The purple circular spots and puncta, resembling flea-bites, appear, I think, less frequently at present than formerly; they are the form of petechiæ, however, at all times most frequent among children. Swelling of the parotid gland occurred in three or four cases, but they were not attended with any peculiar malignity of symptoms, and the patients all recovered. Swelling of the axillary gland, and extensive suppuration of the surrounding parts, took place in one instance in a female patient, who ultimately recovered after a tedious convalescence. I have never known so many cases of erysipelas in so short a period, as occurred in the early part of the year 1819. Within a period of three or four months, at least twenty instances of this malady took place in the wards under my care. In general it appeared after some slight remission in the febrile symptoms was perceptible; and it seemed as if an effort at a crisis was made in this way, but the crisis was always imperfect, and the fever would still run on to a certain limit, complicated with this dangerous and painful attendant;—no fatal case, notwithstanding, occurred from this cause. In one very violent case of a female pa-



tient, the leg, the face, and back part of the head, were attacked by erysipelas in succession, and the convalescence was protracted nearly to three months. The plan of treatment which I have found most successful consists in blood-letting, general or topical, fomentations, and saline purgatives. In the Erythematous Erysipelas, accompanied with vesicles, a little powdered starch or flour sprinkled over the part, was found of great advantage.

The pulse and tongue obviously form the most important objects of attention to the physician, and present the clearest indications of intensity and danger in this disease. In the first, or congestive stage of fever, the pulse is usually weak and accelerated, in the stage of excitement increased both in frequency and fulness.

If inflammation of some internal organ accompany this stage, as it usually does, it is marked by its characteristic inflammatory pulse, hard, full, and bounding; the arterial tubes appearing to become endued with greater density and elasticity in proportion to the increased velocity and resistance of their contained fluid. In the stage of debility, or collapse, the pulse retains or increases its frequency, but loses its tone and strength, the blood appearing now to be propelled more feebly through a narrower and less elastic canal. This is generally the state of things when the

fæces and urine flow involuntarily. The nervous and muscular energies seem so utterly obliterated, that it has often appeared wonderful to me, how the motion of the heart and of the blood was supported. This is also the state of things in which gangrene is apt to supervene on the other formidable train of symptoms; yet from this aggregation of symptoms, formidable as it appears, and really is, almost daily instances of recovery occur.

The tongue is, in many instances, even a more valuable and unerring index of type and danger in fever than the pulse: it presents all the varieties of shade from white to deep black. The white and creamy tongue is generally symptomatic of the lighter and milder fevers; the other shades, of the malignant; and of these, the black marks the highest grade. When the tongue becomes black the entire surface is covered with a black crust, extending to the edges. When the brown colour predominates, it is merely deep brown in the centre, and grows lighter in shade, to yellow or white, near the edges: a red glossy appearance of the tongue is also not uncommon. That the various appearances of the tongue indicate different degrees of derangement in the stomach and primæ viæ, appears from the favourable change always produced by purgative medicines. But that they are also connected with the state of



the sensorium, as remarked by Dr. Bateman, appears highly probable. Almost in every instance where I have seen the head relieved by topical blood-letting, a favourable change has taken place in the appearance of the tongue; but it is probable, that the relief of the sensorium acts primarily on the stomach and *primæ viæ*, and thus indirectly on the tongue. It has long been an object of inquiry with me, to determine what particular indications may be deducible from the morbid appearances of the tongue, but I have not been able to collect any thing very satisfactory. It appears to me, however, that the black tongue is generally attendant on inflammatory typhus in its severest form, and always indicates inflammation or congestion in one or more of the viscera. The yellow tongue is generally expressive of the milder bilious diathesis, for the severest form of bilious fever, as the yellow fever, is usually attended by a black tongue, indicating a high degree of inflammatory action in the biliary organs. The polished red tongue has appeared to be connected with a peculiar acrimony, or aphthous state of the *primæ viæ*, and is often attended with diarrhœa.

Retention of urine has been pointed out in my former Report as a symptom of paramount importance in the treatment of fever, and one very likely to escape observation, unless a strict exa-

mination of the abdomen, and careful inquiry be made as to the state of the urinary secretion. In large fever hospitals, where the complement of nurse-tenders is often scanty, and where the attention of the physician is necessarily divided between a great number of patients, I fear this symptom has often been the undiscovered cause of death. One fatal case occurred to me in the course of last year, from this cause, although no precaution nor exertion were omitted to counteract its effects. The case was that of a patient, named James Flinn, an elderly man, who was admitted on the tenth day of his fever in a state of insensibility; on examining the abdomen, a great degree of tension was discovered, and it was found he had not passed water for the previous four-and-twenty hours. The catheter was immediately employed, and thenceforward we were under a necessity of introducing it daily, which was effected with the utmost difficulty, until his death. It appeared by the information of his friends, that he had laboured for some time previous to his admission under a disease of the prostate gland, and had been in a surgical hospital for its cure. He gradually recovered from his fever, and was enabled to take food for some days. The disorder of the urinary organs, however, continued unabated, and the man ultimately died hectic, apparently from this cause alone, in three weeks after his admission. The delicate state of his



stomach rendered it impossible to administer internal medicines, except in minute quantities. Lime-water, decoction of uva ursi, and spiritus terebinthinæ, were tried without effect.

On the treatment of fever much has already been written, and I am not aware that recent discovery has added any thing to the stock of remedies long since known. I need not repeat that blood-letting has been of late a subject of frequent discussion, and even of dissension, as a remedy for this disease. It appears that a tolerable degree of unanimity at present exists as to the utility of blood-letting in most, if not all, cases of fever; due attention being paid to the period of disease, constitution of the patient, and other controlling circumstances. Some difference of opinion, however, still exists, as to the quantity to be abstracted within a limited time. In a Report of the Queensbury-house Fever Hospital, in Edinburgh, recently published,\* I find that blood-letting has been carried to an extent at that institution not generally necessary even in the phlegmasiæ; but I do not think its success has been by any means so remarkable as to warrant its general adoption. The mortality stated in that Report, 1 in 22-23, in the year 1818, has been more considerable than that in the House of Recovery,

\* See Walsh on Blood-letting in Fever.

Cork-street, for the same period, where it was only 1 in 30,\* and where moderate blood-letting only is practised, and even this with much circumspection, and cautious attention to the circumstances of the patient. The abstraction of large quantities of blood, at an advanced period of the disease, is even condemned by the authors of the inflammatory theory; and I own such a proceeding appears to me little better than rash experiment. So many cases daily occur in which patients under very desperate circumstances, fully as desperate as those of the fatal cases detailed in the report above-mentioned, recover by a palliative and cordial treatment alone, assisting nature in the struggle; that the physician who takes thirty or forty ounces of blood at an advanced stage of the disease, and then loses his patient, certainly deprives himself of the consoling conviction of having done no harm, a consolation not to be counterbalanced, in my opinion, even by the success of a hazardous experiment. In fine, although I am a decided advocate for moderate blood-letting in fever, I cannot approve of

\* See Report for 1818. In Stevens's Hospital, under the management of Doctor Crampton, the mortality was so low as one in fifty. In justice to the House of Recovery, Cork-street, however, it is necessary to state, that no chronic cases were admitted into the fever wards in Stevens's Hospital; in our hospital the deaths from chronic complaints amounted to more than a third of the entire. See page 498.



this extravagant waste of “the life of the animal” above alluded to. In those diseases, whose inflammatory character is much less dubious than that of Typhus-fever, it does not appear that blood-letting has been practised with success in their advanced stages, in which physicians of experience rather trust to stimulants than depletion. In those cases it is probable that blood-letting augments the general debility, and renders the impacted capillaries utterly unable to propel forward the included blood. Under all circumstances, there is a certain balance between the fulness and power of the arterial system, which must be regulated with caution, particularly in a disease whose symptoms exhibit decisive marks of actual debility. That certain cases occur, however, where large detractions of blood may be not only safe but necessary—for example, in persons in the vigour of life, and of a plethoric, sanguine, temperament, is undeniable; but the success of the practice in such persons, or rather, as it may perhaps be truly said, their escape from its effects, by no means establishes the propriety of its general adoption. To prove the truth of the principles here laid down, I shall not lengthen this Report by a particular detail of cases; suffice it to say, that the general average mortality for the last three years in this hospital has been only 1 in 22, and that the mortality in the wards particularly under my care, has been at least not

more than this ; but the principles here inculcated were those which guided the details of practice. The period at which blood-letting was found most useful has been the commencement of the disease, which by a temperate and judicious use of this remedy, will generally run its course in a milder form than if it were omitted.

It has been asserted by some respectable authorities, that blood-letting has succeeded with them in actually curing the disease. Although it is impossible to doubt a fact so attested, yet I have not been so fortunate in several instances in which I pushed this remedy to a pretty large extent, as before stated. In the spring of the present year, Typhus-fever was ushered in by pneumonic symptoms and pectoral distress, in a great majority of cases. In all those blood was taken to the amount of fifty or sixty ounces, in bleedings of twelve to sixteen ounces, according to the age and strength of the patient, each day. Under this treatment the chest was invariably relieved ; but immediately after the head would become affected, which being in its turn freed from pain, symptoms of debility supervened, which forbade a further use of the lancet. In four cases, with the above treatment, the fever ran on to the 20th and 21st days ; and in two of them there was dangerous ulceration of the sacrum—both however recovered.



In all the other cases the fever proceeded with milder symptoms. The two worst cases, just now mentioned, were marked by pectoral distress at their commencement, and were bled for three successive days, to the amount of fourteen ounces each day, within the first six days after the attack. The fever, however, went on, attended with that formidable train of symptoms which is always the precursor of ulceration of the hips or sacrum, viz. delirium, subsultus tendinum, involuntary discharges of fæces and urine, &c. In several other cases these latter symptoms existed, but were less protracted and violent than in those two.

It has been the opinion of the best informed physicians, that the seasons exercise a considerable influence over the type of fever, heightening or lowering its inflammatory character according to their severity or mildness, and shewing a tendency to affect particular organs in the different periods of their revolution. This opinion has been fully confirmed by my experience in the fevers of this city. In the spring, and beginning of the year, fever is generally complicated with pulmonary or pleuritic inflammation, or general rheumatic pains, more or less acute. This is the period at which blood-letting proves a safe and powerful remedy in the cure of fever, and in which I conceive there is least danger of excess in its employment.

In autumn and the early part of winter, bilious and dysenteric symptoms predominate, and admit the employment of the lancet also, but with a more cautious hand and more moderation than the preceding class of cases. In mid-summer and mid-winter the low Typhus, or *fievre T. alaxique*, of the French, in which no distinct pain is complained of, and the patient lies apparently in a state of pure exhaustion, either comatose, or affected with low muttering delirium, tremors of the tongue and hands, and involuntary dejections. The propriety of blood-letting in this class of fevers appears much more questionable than in the former. Its employment in them undoubtedly demands the utmost caution, and an accurate calculation of indications, and I own appears to me, at best but a doubtful remedy. This form of fever presents itself in all seasons, but I think it is more prevalent at the periods above-mentioned than any other.

The following species of fever, arranged according to the classification before suggested, are those which present themselves most frequently in our hospital:—

- |    |  |  |
|----|--|--|
| 1. | { Cerebral. In flam. Typhus,<br>varying in degree, gravis, &c. | { Occurring indifferently<br>in all seasons. |
| 2. | { Pulmonic Typhus,   | { Spring and winter.                         |
| 3. | { Gastric Typhus (including<br>bilious and dysenteric)         | { In autumn.                                 |



- |    |                              |                      |
|----|------------------------------|----------------------|
| 4. | { Low or simple Typhus with- | { In summer and mid- |
|    | out distinct pain,           | winter.              |
| 5. | { Rheumatic Typhus, attended | { Winter.            |
|    | with general pains,          |                      |

The species above-mentioned are not confined exclusively to the seasons specified here, for they occur indiscriminately in all, but each appears to predominate more particularly at the times I have stated.

The following abstract of the principal occurrences in the wards more particularly under my care, during an attendance of seven months as intern physician, in the year 1819, will serve as an illustration of the observations just now made.

In the month of January 113 patients were dismissed cured, and four died; of the 113 discharged 49 were blooded, complaining in most instances of acute pain in chest or side. The greatest quantity of blood taken from any one individual was 48 oz. the medium quantity, 24 oz. taken in separate bleedings of 10 or 12 oz.; of the four who died, two were females advanced in life, who died of asthmatic phthisis; one was an infant, who died in consequence of previous neglect; the fourth died of fever.

In the months of February and March 171 were dismissed cured, and seven died: of the whole

number dismissed 69 were blooded from the arm, being mostly affected with pulmonic inflammation, or rheumatic pains: 21 were blooded from the temporal artery or leeched. The medium quantity of blood taken from each individual was 24 ounces. Of the seven who died, two died of chronic diseases, and five, including the case of Flinn, formerly mentioned, of fever. The four remaining were admitted at a very advanced period of the disease, and were capable of sustaining no other remedy but wine, which was administered in vain.

In June and July 131 were dismissed cured, and seven died. Twenty-nine only of the dismissed were blooded from the arm, 21 leeched or blooded from the temple; medium quantity of blood 16 ounces. Of these seven who died, one died of a chronic disease, and six of fever, who were admitted pretty nearly in the same circumstances as the former.

In September and October 96 were dismissed, and nine died. Twenty-seven of the dismissed were blooded from the arm, and 16 from the temple, or were leeched; medium quantity 24 ounces.

Two patients, the one named Keenan, a female, aged 40, the other a young man named Elston, aged 21, both labouring under low typhus, were treated without the employment of blood-letting



in any form, and happily recovered. A patient named James Reilly, a member of a family, all of whom had been affected with fever, and two of whom died before his admission, passed through a low typhus with the loss only of 15 ounces of blood, viz. 10 from the arm, and five from the temple. He was convalescent on the 19th day. He complained of slight symptoms of pectoral distress at the commencement of his fever, which was the cause of the moderate abstraction of blood above-mentioned.

In the months of Sept. and October, nausea and bilious vomiting were frequent concomitants of fever at its commencement. Many of those cases were relieved by venæsection to the amount of 10 or 12 ounces. In others, who were not treated by blood-letting, the saline effervescing draughts were administered with advantage, in others the following antiemetic draught succeeded.

℞ Infus. menth. sativæ, ℥i. spir. æther vitriol,  
3 ss. spir. ammoniæ aromat. 3 ss. tinct. opii. gtt. x.  
syrup. ʒss. m.

F. t.—Haustus subinde sumendus urgente vomitu.

An obstinate case of singultus was also relieved by the above mixture.

Of the eight deaths which occurred in those two

months, four died of chronic diseases, an infant on the mother's breast of an extensive burn, received before admission, and four of fever: two of the latter were moribund on admission.

Thus in the seven months above-mentioned, 511 were dismissed cured, and 27 died, making the average of mortality 1 in 20 nearly. Of the 27 deaths, 16 only died of fever, the remaining 11 having sunk under chronic diseases, chiefly phthisis pulmonalis, and the asthma of old age. If we exclude the chronic cases, the mortality from fever alone will be only 1 in 32 $\frac{1}{2}$ .

In order to ascertain the ages at which fever is most fatal, I have extracted the following table from the registry, exhibiting the ages of all the fatal cases which occurred in the hospital in the year 1819.



TABLE, shewing the ages of all the Patients who died in the House of Recovery, Cork-street, in the year 1819.

| 1819,<br>Months    | Ages<br>under 10<br>years. |         | From<br>10 to 20. |         | From<br>20 to 30. |         | From<br>30 to 40. |         | From<br>40 to 50. |         | From 50<br>and<br>upwards. |         |
|--------------------|----------------------------|---------|-------------------|---------|-------------------|---------|-------------------|---------|-------------------|---------|----------------------------|---------|
|                    | Males.                     | Females | Males.            | Females | Males.            | Females | Males.            | Females | Males.            | Females | Males.                     | Females |
| Jan.               | 1                          | 1       | 4                 | 2       | 3                 | 1       | 3                 | 3       | 4                 | 2       | 5                          | 3       |
| Feb.               | 1                          | 0       | 1                 | 1       | 4                 | 4       | 2                 | 6       | 4                 | 0       | 4                          | 4       |
| March,             | 0                          | 3       | 0                 | 2       | 2                 | 5       | 4                 | 1       | 3                 | 0       | 4                          | 2       |
| April,             | 1                          | 1       | 1                 | 3       | 4                 | 1       | 2                 | 5       | 1                 | 3       | 1                          | 0       |
| May,               | 0                          | 2       | 0                 | 1       | 4                 | 1       | 3                 | 0       | 1                 | 0       | 1                          | 2       |
| June,              | 1                          | 1       | 1                 | 1       | 1                 | 3       | 3                 | 2       | 2                 | 2       | 3                          | 3       |
| July,              | 0                          | 2       | 0                 | 0       | 0                 | 0       | 5                 | 2       | 1                 | 2       | 3                          | 2       |
| Aug.               | 1                          | 0       | 0                 | 0       | 1                 | 2       | 0                 | 2       | 0                 | 0       | 0                          | 1       |
| Sep.               | 1                          | 1       | 0                 | 0       | 2                 | 0       | 1                 | 0       | 1                 | 5       | 0                          | 1       |
| Oct.               | 0                          | 1       | 1                 | 0       | 1                 | 2       | 1                 | 4       | 1                 | 0       | 1                          | 1       |
| Nov.               | 1                          | 1       | 1                 | 0       | 1                 | 0       | 2                 | 2       | 1                 | 1       | 3                          | 0       |
| Dec.               | 1                          | 0       | 1                 | 1       | 1                 | 3       | 0                 | 2       | 1                 | 1       | 2                          | 1       |
| Total.             | 8                          | 13      | 10                | 11      | 24                | 22      | 26                | 29      | 20                | 16      | 27                         | 20      |
| Total of both, 21. |                            |         | 21                |         | 46                |         | 55                |         | 36                |         | 47                         |         |
| General Total,     |                            |         |                   |         | 226               |         |                   |         |                   |         |                            |         |

Highest number from 30 to 40 years of age.

PROPORTION of deaths to admissions in the several ages above.

| From | 1 to 10 | 10 to 20 | 20 to 30 | 30 to 40 | 40 to 50 | 50 and<br>upwards. |
|------|---------|----------|----------|----------|----------|--------------------|
| as   | 1 to 20 | 1 to 15  | 1 to 22  | 1 to 12  | 1 to 10  | 1 to 6             |

As to the precise form in which blood-letting may be employed in this disease, general venæsection appears to me the most convenient and manageable, and capable of most exactness as to quantity. When the head is violently engaged, as evinced by throbbing of the temples and furious delirium, if venæsection does not allay the violence of the symptoms, it may be necessary to take ten or twelve ounces of blood from the temporal artery, which produces a much more decisive effect, in my opinion, than leeching, a process more inconvenient and uncertain as to the quantity of blood taken away. In those cases, however, where arteriotomy may be impracticable or inapplicable, instances of which will immediately occur to the medical reader, leeches present a safe and very valuable resource.

The head should in all cases be close shaved, and washed with soap and warm water, at the commencement of fever. The exhibition of a warm bath at this period also, rendered stimulant by the addition of common salt or spirits, as suggested lately by Doctor Robert Jackson, appears to me a measure of great utility. In the more violent cerebral derangements, the application of cold to the head has been found of the greatest advantage in lessening delirium.—I know no more convenient form of applying this remedy than that of a simple shower-bath, made by pouring a



jug of cold water over the shaven scalp, the head being projected over the side of the bed: common cold water will, in general, be found sufficiently cold for this purpose, particularly in winter. From this mode of applying this remedy I have always seen a marked diminution of delirium and pain.

Care, however, should be taken neither to pour the water in too great a torrent, nor continue its application too long, otherwise the patient's respiration may become affected, and dangerous consequences ensue. As an auxiliary to the treatment now mentioned, a blister laid on the nucha will, in general, complete the success of the remedies adapted to the relief of the brain and head. The moderate blood-letting here recommended, with the aid of the other remedies now pointed out, will, in my opinion, be as certain, and much more safe, than the extravagant system of depletion which has lately become fashionable.

The use of purgatives must evidently be restricted by the other depletory processes resorted to at the same time. After the bowels have been fully evacuated by a full dose of calomel, joined with some other mild purgative, and assisted in its operation on the following day by castor-oil, I think it sufficient, in general, to keep up a moderate secretion from the alimentary canal,

by small doses of calomel and antimonial powder\* frequently repeated. This medicine appears to me not only to secure the object above-mentioned, but to have a tendency also to soften the skin, and promote the cuticular excretion in a salutary manner.

The medicine thus employed sometimes affects the salivary glands ; but this is an effect which I have never seen injurious in a single instance, though it may be sometimes inconvenient and unnecessary ; it is, in a majority of cases, rather to be desired than deprecated. This medicine is peculiarly useful in fevers of the gastric or bilious type, but is applicable to all. Where great prostration of strength happens to be combined with this type of fever, a mild mercurial, as the blue pill, combined with an anodyne diaphoretic, as the Dover's powders, have best fulfilled the indications above-mentioned. The pediluvium is a remedy which I have found highly useful in procuring sleep, and whose application is never omitted. Where the skin has been softened by the powders above-mentioned, it is evident that the cold or tepid ablution of the body becomes inapplicable ; but where the skin still retains its aridity and elevated temperature, I have fre-

\* Dr. Stoker has given a strong testimony in favour of antimonial powder in fever.—See STOKER on Fever.



quently directed the tepid ablution of water mixed with vinegar, or a little spirits, with great effect. The eau de Cologne, which is recommended by Dr. Jackson in the warm-bath, I should think very useful as an ingredient in such lotions.

These remedies are only applicable to the first and second stages of fever ; in the third, or stage of debility, I have always found it safer to trust to enemata for the evacuation of the bowels, than internal purgatives. In this stage, also, the camphor mixture, with Hoffman's anodyne liquor, and a little of the aromatic spirit of ammonia, has been found a most useful anti-spasmodic and stimulant. When great irritation and subsultus tendinum exists, small doses of opium joined with camphor, have been employed for the same indication. In this stage, likewise, I consider a moderate use of wine indispensably necessary ; and it appears to me not a little extraordinary, that some late writers, of undoubted experience in this disease, should have condemned the use of wine in all its stages. It is possible that the more luxurious habits of our neighbours of the sister kingdom may render wine a less useful and powerful remedy in this disease, than it is with a people less accustomed to this beverage. However this be, I have always found it a salutary remedy in the latter stages of fever, and I can attest, that a vast number of cases have occurred, in which the com-

fort and support derived from it were so great, that persons in very desperate circumstances have attributed their recovery to its agency alone. For the purpose of dilution, and to allay the intense thirst always accompanying this disease, the dilute mineral acids, whey, and buttermilk, form the standard drink in this hospital, according to the taste of the patients, who are generally very capricious in this respect.

In the remarks made by Doctor Grattan, in his Report for the year 1815, on the muriatic acid, I fully concur ; in cases attended with black sordes of the mouth, black tongue, and a tendency to putrescence in the animal fluids, I have found the highest advantage from this acid, both in counteracting putrescence and allaying thirst.

In several instances also, of late, I have employed the combined nitric and muriatic acid, as recommended by Doctor Scott, in cases of Typhus-fever, attended with hepatic disease, with the most decided advantage. It has been employed, however, only internally, in order to take advantage of its acid and antiseptic powers, as well as its influence on the glandular and hepatic systems. In cases attended with black and putrid discharges from the bowels, yeast and fresh porter wort will form a useful auxiliary to antiseptics above-mentioned.—The yeast may be given in



conjunction with the acid, as recommended by Doctor Grattan, or with camphor mixture, in which form I am mostly in the habit of directing it. Of the utility of blisters in the first and second stages of fever there can be no question; no remedy acts more powerfully in aid of blood-letting, for the relief of topical inflammation or congestion. In the last stage of fever they have also been much employed as stimulants, applied to the head, the inside of the legs and thighs, &c. but I have never seen any great advantage from them under those circumstances, and have generally trusted more to the internal stimulants and antiseptics before mentioned.

A multitude of symptoms will occur in the progress of this disease, which will be continually making a demand on the sagacity and experience of the physician, and which it is impossible to comprehend within the limits of this report. In fine, continued fever is nearly an epitome of all diseases, with symptoms as numerous, and forms as various, as its victims.

KILDARE-STREET,  
Oct. 24, 1820.

THE END.

*2nd ed. June 13. 1823*





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